

# Feed.

JERÓNIMO MARTINS WORLD'S MAGAZINE

N5.  
JUNE 2018

*LIGHT*



L I G H T

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*POLAND  
INDEPENDENCE*

—  
*LIGHT  
IS RIGHT*

—  
*RAY  
OF HOPE*



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JERÓNIMO MARTINS WORLD'S MAGAZINE

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### A RAY OF HOPE

The producers of one of the world's best cheeses are now starting to see a glimmer of hope, as the dust settles on the devastated landscape that was burnt down last year by the worst forest fires in more than a century in Portugal's countryside.



### LIGHTING UP COLOMBIA

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How a water bottle and a brilliant idea have illuminated more than 1,200 homes in 47 communities in the country.



### MAGNIFEYE

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Often called the window to the soul, the eye is the ultimate gateway to light. It detects and welcomes it, magnifying our perception of world. But there's whole lot more beyond than meets the eye.

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How an apparently simple, dormant piece of glass comes to life in a dance of shades and colours that are shaped by the ever-changing intensity of light throughout the day.



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A night walk through the glory days of neon in downtown Lisbon.

## THE POWER OF LIGHT

Finding the right balance between growing and keeping weight under control is not an easy task. That's why, at the Jerónimo Martins Group, we believe we have an important role to play in keeping it light, as you will find out in the following pages of this Feed issue.

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70.73



The world's best aquarium has just celebrated twenty years. Its mission remains unchanged: to be a beacon of light in ocean conservation.



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106.111

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50.63

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74.81

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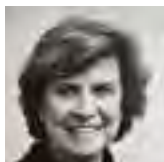
### THERE'S A LIGHT THAT NEVER GOES OUT



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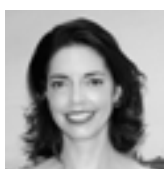
## CONTRIBUTORS.



*ANA MARIA  
EIRÓ*

**FULL PROFESSOR  
OF PHYSICS,  
UNIVERSITY OF LISBON**

PhD in Nuclear Physics in 1980, Ana Maria Eiró has been involved in teaching and researching since 1970. Ana is a member of the Physics Department of the Faculty of Sciences of the University of Lisbon, with a permanent position since 1985. She is also a former Director of the Museum of Science of the University of Lisbon. More recently, Ana Maria Eiró has been engaged in promoting an increasing public awareness of science and was the curator of several important scientific exhibitions in Portugal.



*JOANA  
MONTEIRO*

**DIRECTOR OF THE MUSEUM  
OF LISBON**

Joana Sousa Monteiro has been the director of the Museum of Lisbon since 2015 and President of the International Council of Museums (CAMOC) since 2016. Joana has a degree in History, with specialisation in History of Art from the Universidade Nova, and a postgraduate degree in Management and Creative and Cultural Entrepreneurship from ISCTE – Instituto Universitário de Lisboa. Prior to that, Joana was Councillor for Culture of the Lisbon City Council (2010-2015) and Joint Coordinator of the Portuguese Museum Network (2000-2010).



*CAMILO  
HERRERA*

**SOCIAL  
ENTREPRENEUR**

Camilo Herrera is the Executive Director & Founder of “Un Litro de Luz Colombia”. Camilo is on the top 10 Social Entrepreneurs in Colombia and the first one to join the global changemaking network Red Impulsores del Cambio. En 2017, his work at the helm of “Un Litro de Luz Colombia” (Google Impact Challenge prize winner 2017) was awarded the Premio Everis, an annual competition which recognises innovative and impactful projects.



*KATARZYNA  
SIERAKOWSKA*

**AUTHOR AND PROFESSOR  
AT THE TADEUSZ MANTEUFFEL  
INSTITUTE OF HISTORY**

As a Professor at the Tadeusz Manteuffel Institute of History, Polish Academy of Science Warsaw, Katarzyna Sierakowska's research interests include the social history of Poland both in the 19<sup>th</sup> and 20<sup>th</sup> centuries, with particular focus on WW1 and Inter-War period, the history of women and history of gender. Katarzyna is the author of several articles and books: “Parents, children, grandparents...The big-city intelligentsia family in Poland 1918-1939” and “Death – exile – starvation in personal documents. Polish lands during the Great War 1914-1918”.



*JAN  
OLASZEK*

**HISTORY RESEARCHER,  
INSTITUTE OF NATIONAL  
REMEMBRANCE**

Jan Olaszek works at the Historical Research Office of the Institute of National Remembrance (IPN). Jan deals with the history of the democratic opposition in the People's Republic of Poland and holds a scholarship at the Foundation for Polish Science, the Kersten Foundation and the Research Centre for East European Studies at the University of Bremen. Jan Olaszek won the first prize in the European Solidarity Centre competition for the best Master's thesis on the opposition in the People's Republic of Poland (2010) and the History Award, founded by the “Polityka” weekly, for the best science and popular science book (2016).



*LUÍSA  
ROUBAUD*

**AUTHOR AND RESEARCHER  
AT THE INSTITUTE  
OF ETHNOMUSICOLOGY**

Luísa Roubad is a Researcher at the Institute of Ethnomusicology – Study Centre in Music and Dance and Professor in Dance Studies at the Faculty of Human Movement (University of Lisbon). Luísa holds a PhD in Dance, an MA in Portuguese Culture and Literature and in Psychology. In the past, she trained as dancer and worked as an actress. Her areas of interest are psychology and performing arts, and post-colonial and cultural studies in dance in the Lusophone context, topics in which she is the author of several essays and other writings. Luísa is a dance critic in the Portuguese press.



*ÓSCAR  
CARDOSO*

**GUITAR  
LUTHIER**

Born in 1960, Óscar Cardoso started devoting himself to guitar-making and repairing 35 years ago. Óscar learned the art from his father, who was also a luthier. When he reached adulthood, he joined the Scuola Internazionale de Liuteria de Cremona as a scholar from the Secretary of State of Culture, with the goal of tightening up skills and techniques that his progenitor had taught him. His search for a unique, Nature-inspired sound, made him create the acclaimed backless guitars. Óscar's creations have been played by the hands of some of the most renowned Portuguese guitar artists and exhibited at the Museu do Fado, in Lisbon.



*TOMASZ  
TUSZKO*

**PHOTOGRAPHER  
AND VISUAL ARTIST**

Tomasz Tuszko is a visual artist in the company Witraże [Stained Glass]. From 1975, he has been associated with the workshop of stained glass of Teresa Maria Reklewska, first as a student, then as a collaborator. Tomasz authored the stained-glass windows in the churches in Anin, Warsaw and Inverness, and also a monumental mosaic in Muirhead. In cooperation with Jerzy Kalina, he made stained glass windows for parish churches in Komorów and Wrocław. Photographer, author of several exhibitions, Tomasz writes about photography for the online magazine “Fototapeta”.

# Editorial.



PEDRO  
SOARES  
DOS  
SANTOS

## LET THERE BE LIGHT

**The same** way our steps can be traced back by the footprints we leave in the sand when we walk by the seashore, our actions leave a trace.

We are aware that as our businesses keep on growing in Poland, Colombia and Portugal, the pressure that we put on the planet tends to be heavier. At Jerónimo Martins, we do not take this matter lightly and we refuse to sit back and do nothing about it.

In this edition, amongst many other subjects, you will find out how committed we are to staying light.

This happens, for instance, when we develop our Private Brand products. On the inside – by cutting down ingredients such as sugar, salt or fat – and on the outside, by making our packaging more eco-friendly.

It happens also when we choose to acquire 100% of the electricity we use to power the more than 500 stores and Distribution Centres in Portugal from renewable sources. Because we feel that, in many ways, light is right, we picked “Light” as the central theme of this issue and, in the fashion of Feed, explored some of its possibilities of meaning.

When we strive to have a positive impact in the lives of those who are close to us we are choosing to be a light in the darkness for those in need. After the worst forest fires in a century – that devastated part of Portugal’s countryside last year – we are happy to be part of a new ray of hope that is now dawning amongst the sheep producers of the world-renowned Serra da Estrela cheese. In the political landscape, Colombia just elected a new President. The 41-year-old former senator Iván Duque reaped the majority of the votes and, on his first speech, promised to make some changes to the 2016 peace deal with the FARC. Most importantly, Duque made a pledge to preserve peace in the country, which is a positive signal of the bright future that lies ahead for Colombia.

Poland is celebrating this year the 100<sup>th</sup> anniversary of the country’s independence. On November 11 of 1918, Poland claimed back its place in the map of Europe. Because there can be no light where freedom does not exist, the national identity and sovereignty of the Polish people are praised in this issue.

Lisbon, where our Group’s headquarters are based, is well known for its very special light, namely over the hills and by the river side. One of the major tourist attractions in Lisbon is the Oceanário, the best aquarium in the world in 2017 according to Trip Advisor. João Falcato, its CEO, tells us how this 20-year old impressive facility is a beacon for the preservation of the oceans’ biodiversity across the globe.

As the old saying goes, “let there be light” while this issue of “Feed” keeps you company. ●

*PL L L L*

Pedro Soares dos Santos,  
Chairman of the Jerónimo Martins Group

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# Fresh*in*

NEWS FROM OUR WORLD

© Photo courtesy of Parq&Gardys



1.

Organised since 2011, the Light Move Festival soon became one of the most popular outdoor events in the country.

## LIGHT MOVE FESTIVAL RETURNS TO ŁÓDŹ IN SEPTEMBER

The greatest festival of lights in Poland is coming. From 28<sup>th</sup> to 30<sup>th</sup> September, the Festival of Kinetic Art of Light – Light Move Festival will offer the city dwellers and tourists an unusual visual spectacle, combining light, colour, sound and state-of-the-art green technologies to empower unique creations. Every year, during three evenings, large format projections, videomappings, artistic illuminations, and numerous light installations spread all over Łódź, along a 15-kilometre route, presenting its eclectic buildings, streets, courtyards and forgotten corners in a magical way, amazing viewers with a shine show, hidden in the day light. The festival is a fusion of the historical identity of Poland's third largest city and visual arts. The main theme of the 8<sup>th</sup> edition's works is "100 years of Independence – In celebration of Joy". The projects will be based on motives such as: freedom, future, diversity, human rights.

## COLOMBIA ELECTS IVÁN DUQUE AS PRESIDENT

© Daniel Garzon Herazo / NurPhoto / Gettyimages



Iván Duque will take over from Juan Santos in August. He is the youngest elected president in Colombia's 132-year history as a republic.

Iván Duque Márquez, of the right-wing Democratic Centre party, won the second round of the Colombian presidential election, claiming 53,98% (10.373.080) of the votes. His left-wing rival, Gustavo Petro, of the Humane Colombia movement, finished in second place, with 41,81% (8.034.189 votes). On May 27, Duque had won the first round with nearly 40%. When he takes office in August at age 42, President-elect Iván Duque will be Colombia's youngest president in more than a century. Elected for a four-year term, Duque will succeed outgoing President Juan Manuel Santos, whose term was marked by a peace deal with the Revolutionary Armed Forces of Colombia (FARC). The agreement formally ended 52 years of civil war, and the rebels, which disarmed and transformed into a political part, are struggling to reinsert themselves into civilian life. In his victory speech, Iván Duque promised to change parts of the accord but not shred it to pieces: "That peace we long for will have corrections, so that the victims are the centre of the process, to guarantee truth, justice and reparation." Addressing a crowd of jubilant supporters in Bogota, he also assured he would strive to bridge Colombia's division and govern on behalf of all Colombians: "I'm not going to govern with hatred (...) Neither in my mind nor my heart is there a desire for revenge and retaliation", Duque said.

## EUROPE'S BIGGEST SOLAR PLANT TO OPEN IN ALENTEJO

2.

The first unsubsidized large solar photovoltaic plant in Portugal is being built in the country's southeast area (Ourique, District of Beja). With a total installed capacity of 46MWp, Ourika! has cost 35 million euros. Its 142 thousand solar panels will produce 80 gigawatt hours (GWh) of energy per year, enough to ensure the supply of approximately 25 thousand households and avoid the emission of nearly 45 tonnes of greenhouse gases. The construction, which results from a partnership between Solar-firms Solaer Group and Prosolia Energy, began last July, in an area of 100 hectares and is expected to connect to the grid in mid-2018. The name Ourika! derives from a combination of its location - "Ourique" - and the famous interjection Eureka!. The latter has reportedly been used by someone from the development company, MorningChapter, when the perfect location for the project was found.

© fotokar / Shutterstock.com



3.

Being the first large plant to be built in Europe to operate in a market system, Ourika! is changing the renewable energy paradigm.



## INVISIBLE EXHIBITION: COULD DARKNESS OPEN YOUR EYES?



© Janek Skrzyński/Alp/Gettyimages

Moving around your house, paying for coffee at a bar, escaping from the urban hustle. Everyday scenes we rely on vision to perform. But, what if we turned the lights off for a moment and tried to perceive the world with our other senses? That is exactly Invisible Exhibition Warsaw's challenge. The museum takes visitors to an incredible journey into the invisible world, with the help of blind or visually impaired guides. In an interactive pitch-black series of rooms that emulates real-life situations, like a visit to an art gallery, they acquire information through touch, hearing and smell, and sense of balance, and find their way into darkness. To enter those rooms, people have to complete minor tasks first, such as tapping on a Braille typewriter, testing out kitchen gadgets for the blind, and trying to solve simple puzzles while wearing a blindfold. The purpose of the visit is to make us reflect on the difficulties faced by the sightless and understand how they "see" the world, which, even in the darkness, can be beautiful and full of "light". In other words, Invisible Exhibition hopes that an hour of darkness may be an eye-opening experience that will have people thinking about a gift most take for granted. The successful concept was first launched in Budapest, in 2007, followed by Warsaw and Prague, in 2011 and it has been entertaining thousands of visitors in Stockholm since 2016 as well.

# 4.

Trusting someone you don't know in total darkness may be scary but your other senses will help you "see" the exhibition.

## JUAN GABRIEL VÁSQUEZ WINS CORRENTES D'ESCRITAS AWARD

Colombian writer Juan Gabriel Vásquez was awarded the 19<sup>th</sup> edition of the Portuguese Literary Prize Correntes d'Escritas, for his novel "The Shape of the Ruins" (La forma de las ruinas). Established in 2003, the prize rewards books written and published in Portuguese by Portuguese or Hispanic authors with a cash award of 20 thousand euros. Juan Gabriel Vásquez, 44, became the first Latin-American author to win it. The judges panel explained its choice highlighting the book's "notable portrait of the History of Colombia" and its "extraordinary narrative impetus". The book's protagonist is Carlos Carballo, a man obsessed with the past who believes that there is a link between the murders of Rafael Uribe Uribe - the man who inspired García Márquez's General Buendía in "One Hundred Years of Solitude" - and the leader of the Liberal Party Jorge Eliécer Gaitán, separated by more than 30 years. Juan Gabriel Vásquez was born in Bogotá in 1973. He had already been awarded with the International IMPAC Dublin Literary Award, for his exploration of Colombia's drug trade in "The Sound of Things Falling", as well as the Royal Spanish Academy Prize, for "Reputations".



© Martin Bureau/Alp/Gettyimages

Juan Gabriel Vásquez is one of the most acclaimed novelists of his generation. His work has been translated into 15 languages and published in 30 countries.

# 5.

## "FEED" AMONG WORLD'S BEST



"Feed" was awarded the silver medal for the cover design of its 3<sup>rd</sup> issue - Age.

# 6.

"Feed" magazine was awarded the silver medal in the Custom Publishing - Cover Design category, by the prestigious, New York-based, Society of Publication Designers.

This accolade, which recognises best practices in Publishing and Design on a global scale, awarded the design of the cover of the 3<sup>rd</sup> issue of "Feed" magazine - Age. The distinction was announced during the 53<sup>rd</sup> Annual SPD Gala Awards, which took place in New York, last May. The jury, comprising 50 of the most creative international minds in the business, assessed thousands of submissions entered into the more than 80 categories of the competition. Among the finalists there were publications such as "Bloomberg Businessweek", "Wired", "Condé Nast Traveler", "The New York Times Magazine" and "GQ", to name but a few.





# A RAY OF HOPE

*After a catastrophic fire reduced vast tracts of Portugal's woodlands to ashes in October last year, taking 48 human lives and decimating the fauna and flora of the country's central region, the producers of one of the world's best cheeses are now starting to see a glimmer of hope, as the dust still settles on the devastated landscape.*

**IT'S** no easy matter for a community to maintain its resolve and keep alive its hope in the future when not just the livelihood of many of its households is under threat, but also the cultural heritage of a whole region. With the loss of five thousand Bordaleira sheep, along with infrastructures and pasture, in the fires that brought destruction to the eighteen municipalities making up the official demarcated Serra da Estrela region, on 15 October 2017, most cheese producers saw their whole way of life imperilled. The shrinking numbers of milk producers over the past five years – with herds dwindling from 120 to 80 thousand heads of live sheep – was already cause enough for concern. With the fires, the situation became a national emergency, jeopardising the survival of the region's traditional cheese-making industry.



With the aim of helping to restore sustainability in the sector and saving one of Portugal's top food products, as well as avoiding its disappearance from the shelves of its more than 500 shops around the country, the Jerónimo Martins Group decided to join forces with the Queijo da Serra herdsmen and producers. Immediately after the fires, and over the months that followed, producers and the Group's managers met to assess the scale of the losses and to identify the most pressing needs. "These past few (...) months have been particularly hard for the Serra da Estrela sheep farmers, that I have the honour of representing. It has therefore been enormously heartening to hear the news that the Jerónimo Martins Group has offered to help us recover from this terrible setback," wrote the President of ANCOSE (the National Association of Serra da Estrela Sheep Breeders), Manuel Marques, in an Open Letter addressed to the nearly 32 thousand employees of Jerónimo Martins in Portugal. The 50 thousand euros donated to ANCOSE are being used on two fronts: to buy fodder, water troughs and electric fences, and to set up the Serra da Estrela Sheep Breeding Centre, whose mission is to re-establish the sheep population. The first lambs were born at the Breeding Centre in March, and in April they were delivered into the care of the first 30 herdsmen worst hit by the fires. Sebastião Figueiredo, a 32-year old shepherd who lost 25 heads of sheep, had a smile back on his face, and told Feed that the project "is minimising the fall-out from the fire and helping to keep me in business." In total, 400 ewes will be shared out between the association's members. There's still a long way to go to re-establish the herd numbers wiped out last year - more than 5 thousand heads of sheep - but there's now a glimmer of light at the end of the tunnel.

*"The project is minimising the fall-out from the fire and helping to keep me in business."*

*Sebastião Figueiredo, a 32 year-old shepherd who lost 25 sheep to the October 15 fire*

Manuel Marques, President of ANCOSE in the middle, sided by Jerónimo Martins managers and sheep herders of the Serra da Estrela region.



© Gonçalo Villaverde



The Bordaleira sheep produce the only milk used to make the ancient Portuguese cheese.

### PORTUGAL'S OLDEST AND MOST LOVED CHEESE @Jerónimo Martins

One of the seven wonders of the Portuguese gastronomy, Serra da Estrela cheese is protected by its own Demarcated Designation of Origin (DDO) and is highly prized not just in Portugal, but also abroad. The cheese is ripened to yellowish white semi-soft buttery consistency (Queijo Serra da Estrela) or else aged to a brownish orange semi-hard to extra-hard consistency (Queijo Serra da Estrela Velho). Made using the traditional methods of this mountain region, the key ingredient is the raw milk, of exceptionally high quality, produced by the Bordaleira sheep. The earliest reference to Queijo da Serra dates from the Roman occupation, in what is regarded as the first Agricultural Treatise, in which Columela, a Roman army officer, describes the artisanal process for making the cheese. The first cheese market was established by King Denis, in 1287, in Celorico da Beira. Gil Vicente, Portugal's early dramatist and chronicler, refers, in his "Pastoral Tragicomedy of the Serra da Estrela" (1527), to a gift of 500 of these cheeses, made by the town of Seia to Queen Catherine, wife of King John III of Portugal.

DDO Serra da Estrela Cheese from Pingo Doce (Portugal).





**LIGHTING**

**UP**

**COLOMBIA**

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*How a bottle of water  
and a brilliant idea cast light  
onto the more than 1,200 homes  
in 47 communities in the past  
seven years.*

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The founder of "Litre of Light", Illac Diaz, inspecting a solar light bulb installed on a roof of a shanty town in Manila (Philippines).

## A LITRE OF LIGHT

**WE** often hear it said that true happiness lies in the simple things that life has to offer, but we rarely ask what we mean by "simple". And to each individual, in each setting, it can mean something different. So it may come as a surprise to many of us that someone should value something so "simple" as, in the deep of night, being able to see someone wave at us from across the road. And that "happiness" in this case can mean getting home safely. This was the joy felt by the residents of Granizal, on the outskirts of Medellín, when lighting was installed on the main road to their village, to show them the way. "When the work was done, a young girl, aged 11 or 12, came up and told me she was very happy because now they could see who was waiting for them at the end of the street," recalls Camillo Herrera, founder of the welfare project that's bringing lighting to vulnerable communities in the country, using a 1.5 litre water bottle.

The girl's moving response takes him back to 2014. But to tell us how it all started, we ask him to think back a bit further. Seven years ago, Colombia's national grid reached only 44 % of the country and 10% of the population lived without power. Camilo Herrera - previously a fieldworker for another programme and accordingly familiar with this situation - spotted an opportunity where other people only saw a problem. And he made it his own personal mission to bring the most backward regions out of darkness.

He decided to replicate in Colombia the "Litre of Light" project from the Philippines. Restyled as "Un Litro de Luz Colombia", the idea offered an ingenious, low-cost solution: to develop a solar-power light bulb using only a bottle, water, chlorine and a sealant. The idea was not exactly new: the discovery is attributed to Alfredo Moser, a mechanical engineer from Brazil. Moser made an opening in the roof of a house and slotted in a bottle, part of which was exposed to sunlight, and the other half was inside the room, to refract that light. Whilst rudimentary, this invention emitted as much light as an incandescent 40-60 watt light bulb, avoiding 200 kg emissions of CO<sub>2</sub> each year.

Once adopted by "Un Litro de Luz Colombia", the prototype for this solar lamp quickly evolved to an alternative for night lighting, which in its original design included a 1 or 2 watt LED light, a solar micro panel and a battery. At the outset, "the idea was to light people's homes, but we couldn't get funds for that so we had

to focus instead on communities and public spaces", explained the social entrepreneur in an interview with "Feed". This was the origin of the street lights which are lighting up the world. Produced from plastic bottles or PVC piping, the bottles contain two solar panels each with a capacity of 40 watts. These store power in a lithium battery, able to power a LED lamp for 72 hours, spreading light over a radius of 50 metres.

In 2016, after installing more than 1,500 solar powered street lights in 32 communities, Camilo started to think of a more novel way of reaching remote towns and villages: "That was when I discovered another problem: 3.6 billion citizens in the world have no Internet connection", he explained. "So we decided to set up Linterneta, a social venture that helps develop solutions on a pyramid basis. As well as providing a public power service, the project takes wireless internet to areas that telecom operators or the State have yet to reach", he told us. By "we" he meant himself and his small but effective team of eight members, five of them full-time. Outlying communities are connected to the web by a router with a range of 2 km, which also incorporates a Raspberry Pi providing offline education content. With this innovation, the street light earned its new name, ELIOT, an acronym standing for Energy Light-Internet of Things. "People can also charge their mobile phones using USB ports on the lamp post," Camillo added. ELIOT has a useful life of 100 thousand hours and costs 450 euros.



© Ian Wilson / Getty Images

## LIGHTNING BOLT

"Litre of Light" came under the spotlight when, in 2015, Usain Bolt and Serena Williams, as well as other celebrities, fronted a social network campaign organised by Pepsi. The world's fastest man and the US tennis star invited users to share the advertisement with the hashtag #PepsiChallenge on their Facebook, Twitter or Instagram accounts. Each time they did this, the soft drinks manufacturer donated one dollar to "Litre of Light". The aim was to raise a million dollars.

The fastest man in the world was one of the sport celebrities who joined forces to support Litre of Light in a 2015-Pepsi commercial video.



One of the particularities of this initiative is that it's the actual beneficiaries who are responsible for fitting and maintaining the bottles. "We've developed a training programme called Ambassadors of Light, which turns citizens into solar power technicians," explained Camillo Herrera, for whom this educational component is one of the most rewarding aspects of the project. The approach has proved a success: "Our aim is for everyone to be able to take part and become changemakers, helping to develop their communities. People love learning something new, especially when it involves working with their hands." The only materials and tools used are ones that most people have at home. The project has already brought lighting and internet connections to more than 1200 homes in 47 communities, in the departments of Chocó, La Guajira, Putumayo, Antioquia and Bolívar, among others. The success of the project means that its founder is regarded as one of the top ten social entrepreneurs in his country and now exports technology developed in Colombia, benefiting more than 225 thousand people in seven other countries: Jamaica, Puerto Rico, Chile, Ecuador, Ethiopia, Ghana and Kenya.



Camilo Herrera, the Executive Director of Un Litro de Luz Colombia, is on the top 10 Social Entrepreneurs in the country.

© Press Materials / Un Litro de Luz Colombia

*"A young girl, aged 11 or 12, came up and told me she was very happy because now they could see who was waiting for them at the end of the street."*

Camilo Herrera

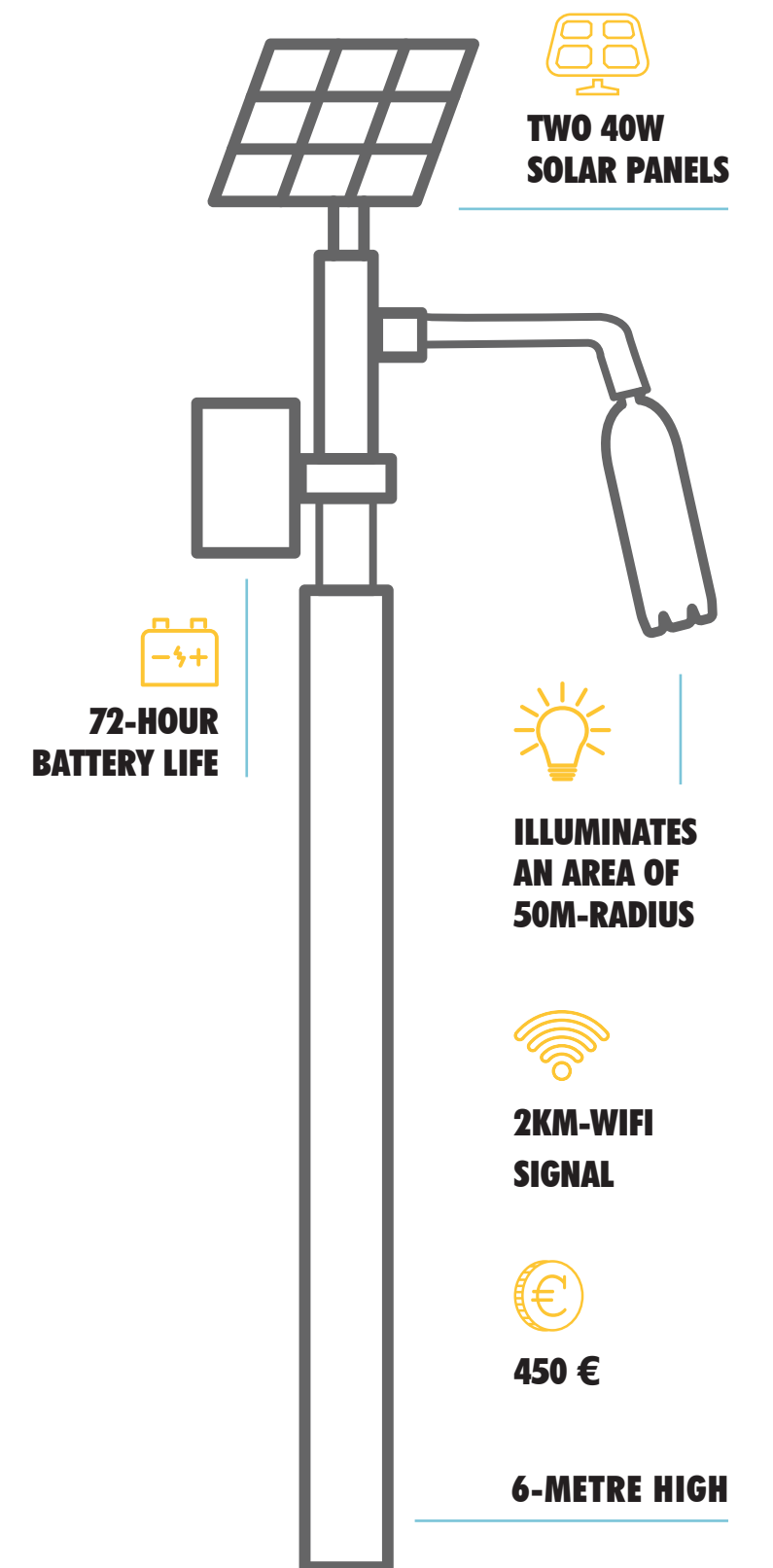
*The beneficiaries are responsible for fitting and maintaining the bottles, which turns them into true solar power technicians.*

### AMBASSADORS OF LIGHT

Un Litro de Luz Colombia is supported by Ashoka, an international organisation promoting social entrepreneurship, as well as by giants in the food, technology and water sectors. The project's success recently caught the eye of Google, which last year selected it for the Google Impact Challenge. Even more than the prize money of 350 thousand dollars, the most important thing for Camillo Herrera was knowing that one of the largest technology firms on the planet had selected it as a "benchmark for innovation" and that it has in Google an ally that can open doors and help them to do better. "We're investing the prize money in a new article for disaster zones and we'll test it out in 100 villages in late 2019." The foundation is now focussed on consolidating its work in conflict areas and in the near future it aspires to "gaining recognition as an outfit able to provide an immediate response to natural disasters." Consolidating its achievements will above all mean ensuring that ELIOT bulbs are widely available on the market, at an affordable price. This will have to entail cutting production costs: the aim here is to bring the cost down from 199 to 99 dollars (from 162 to 80 euros). With the boost from this, the foundation hopes to sell 10 thousand street lights in 2020.

**1,200**  
**homes in 47**  
**communities**  
**in Colombia**

### ELIOT (ENERGY LIGHT-INTERNET OF THINGS) BOTTLE BULBS





# DANCING WITH THE LIGHT

*How an apparently simple, dormant piece of glass comes to life in a dance of brightness, shades and colours that are shaped by the ever-changing intensity of light throughout the day.*



GO FOR SHOPPING

# DELIGHTFUL

**TOMASZ  
TUSZKO**



VISUAL ARTIST IN THE COMPANY WITRAŻE [STAINED GLASS]. FROM 1975 HE IS ASSOCIATED WITH THE WORKSHOP OF STAINED GLASS OF TERESA MARIA REKLEWSKA, INITIALLY AS A STUDENT. AUTHOR OF SEVERAL EXHIBITIONS, WRITES ABOUT PHOTOGRAPHY FOR THE ONLINE MAGAZINE FOTOTAPETA.

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## THROUGH THE STAINED GLASS

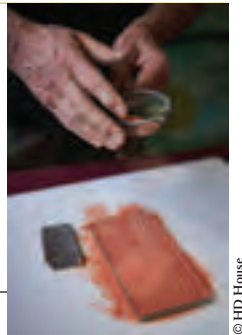
### WHAT

is the essence of stained glass? What makes stained glass art unique? Popular belief has it that stained glass is the colourful figurative or ornamental compositions placed in window apertures – the colourful mosaics made of pieces of glass joined together by black leading. Indeed, this is what stained glass is. However, what makes it unique, what brings it to life is light. Stained glass comes to life at the break of day, its colours dazzle at full brightness at midday and slowly fade away as twilight falls. The interior of a church is completely transformed when the light filtered through stained-glass windows paints sharp patches of colour which dance across the walls and floor as the sun changes position during the day. And the interior is transformed yet again on a cloudy day, when it is filled with a soft, colourful glow.



© HD House

Preparing red-coloured glass in fusing technique



© HD House

It turned out that in Poland, at the time, there was no stained-glass workshop which would be able to carry out the author's artistic vision. Yes, there were a few workshops, but these were craftsman's workshops – unable to let the artist take direct control over each of the many stages of the process of stained glass creation. As a result, the magnificent stained-glass windows for the chancel of the Wrocław church were made in Paris, in Jacques Le Chevallier's workshop. However, Teresa Reklewska's dream was to continue her artistic career in her home country. So, she returned to Poland to open a stained-glass workshop based on her own concept. After many struggles and overcoming various obstacles, she managed to obtain permission from the authorities. In 1975, she started putting the workshop team together.

A university degree was not a requirement – what was important for her was talent, an open mind and the ability to reach a compromise as far as art was concerned. Thus, a unique team was born. And whose key members were an historian of philosophy, a surveying engineer and a technical college graduate. ►

Preparing small pieces of glass by a glass-cutting knife

Polishing by hand small pieces of colourful glass



© HD House

The hue and intensity of light change during the day and the stained glass changes with them. Some of its colours light up and some fade away – the yellows and reds that shine brightly at midday, die away at dusk, whilst the blues remain to provide light until night falls. A true stained glass artist is one who – apart from the necessary art skills – masters the art of a conscious use of light. There is no doubt that the founder of WITRAŻE workshop, Teresa Maria Reklewska, is such an artist. She was a young girl born to a family of landowners when the idyllic world of her childhood, spent in a manor at the foot of the Świętokrzyskie Mountains, was wiped away when World War II broke out. Young Teresa Maria witnessed the death and suffering of those closest to her. After the war, like many other survivors, she went to Warsaw which, at the time, was a sea of ruins. Living in rented rooms and taking on any kind of work she could find, she managed to fulfil her dream, by enrolling at the Warsaw Academy of Fine Arts. Art was like a ray of light for her, helping her find her way through the post-war gloom and breaking through the thickening clouds of Communism, the system imposed on Poland following the war. By a twist of fate or a whim of the authorities, she was granted permission to travel to France to study stained glass. When, in 1960, a Wrocław cardinal Bolesław Kominek announced a competition for stained-glass windows for the enormous Gothic church of St Mary's on the Sand, she submitted her design and won the competition.



## GO FOR SHOPPING DELIGHTFUL



Under the guidance of their Master, this odd team produced stained glass designed by Teresa Maria Reklewska for many churches in Poland, including many of the major historical buildings. Thanks to Teresa's iron will, and despite many adversities, this small, modest workshop in the suburbs of Warsaw created stained-glass windows of ten – and sometimes even a hundred – square metres in size. They created a set of stained-glass windows for the oldest catholic church in Tokyo and many other compositions for churches in Poland. It was here that the gigantic stained-glass windows for the St. Andrew Bobola Sanctuary in Warsaw were made – with their breath-taking power of vision, grand scale and richness of colours. The stained-glass technique consists of scaling a painted design up to 1:1. Next, a carbon copy of the enlarged design is made, in which all the lines separating each piece of glass are marked (in the finished window these will form the leading joints between the glass pieces). This drawing is then transferred onto a piece of cardboard which is

then cut along the marked lines. The cut-out pieces become a template to be used for cutting the glass shapes. The cut glass is painted with ceramic paint and fired in a kiln. During the framing stage, the glass pieces are fastened together by strips of leading (H-shaped in cross-section), soldered with tin at the joints.

The leaded window is then sealed with putty, which makes it rigid and leak-proof. The final stage is assembling the stained-glass panels into a prepared frame.

As years passed, the workshop team members mastered their skills and became independent. They began producing stained glass of their own design. During this period, their Master, Teresa Maria Reklewska, was available for them, providing invaluable advice and discretely supervising the process of stained glass creation. Time passed and new challenges and opportunities emerged. As part of the process of expanding their offering, the workshop became interested in a new technique known as fusing glass – at the time a complete novelty.



Drawing a design of stained-glass window on crust

*The light filtered through stained-glass windows paints sharp patches of colour which dance across the walls.*



© HD House

This technique consists of fusing sheet glass (window panes or glass produced especially for this purpose) in special kilns. Sheets of glass are placed onto a mould in the kiln and heated up to around 800°C. As a result, the glass softens, filling up the mould. During the process, glass can be stained with colour, bent or sculpted. It can be used to create single-unit glass elements – decorative and functional at the same time: fillings for window apertures, partition walls, skylights and more. Although this is by no means a strict rule and although there are, of course, some exceptions, stained glass blends more harmoniously within traditional architecture, while fused glass panels are more at home in modern architectural settings. In both cases, however, light plays the key role in shaping the artwork. Depending on their texture, panels made of fused glass can spread light to a higher or lesser degree. The degree of sheet transparency can vary. It is not uncommon for the decorative elements made of fused glass to be backlit with artificial light, using state-of-the-art technology that enables precise control of light, colour and intensity. While we are not always aware of it, light and colour don't just affect us physically. They can also shake the very foundations of our artistic sensitivity. Just like a ray of sun can shine through a WITRAŻE stained-glass window – a work of art that is testament of Teresa Maria Reklewska's legacy. ●

## DID YOU KNOW?

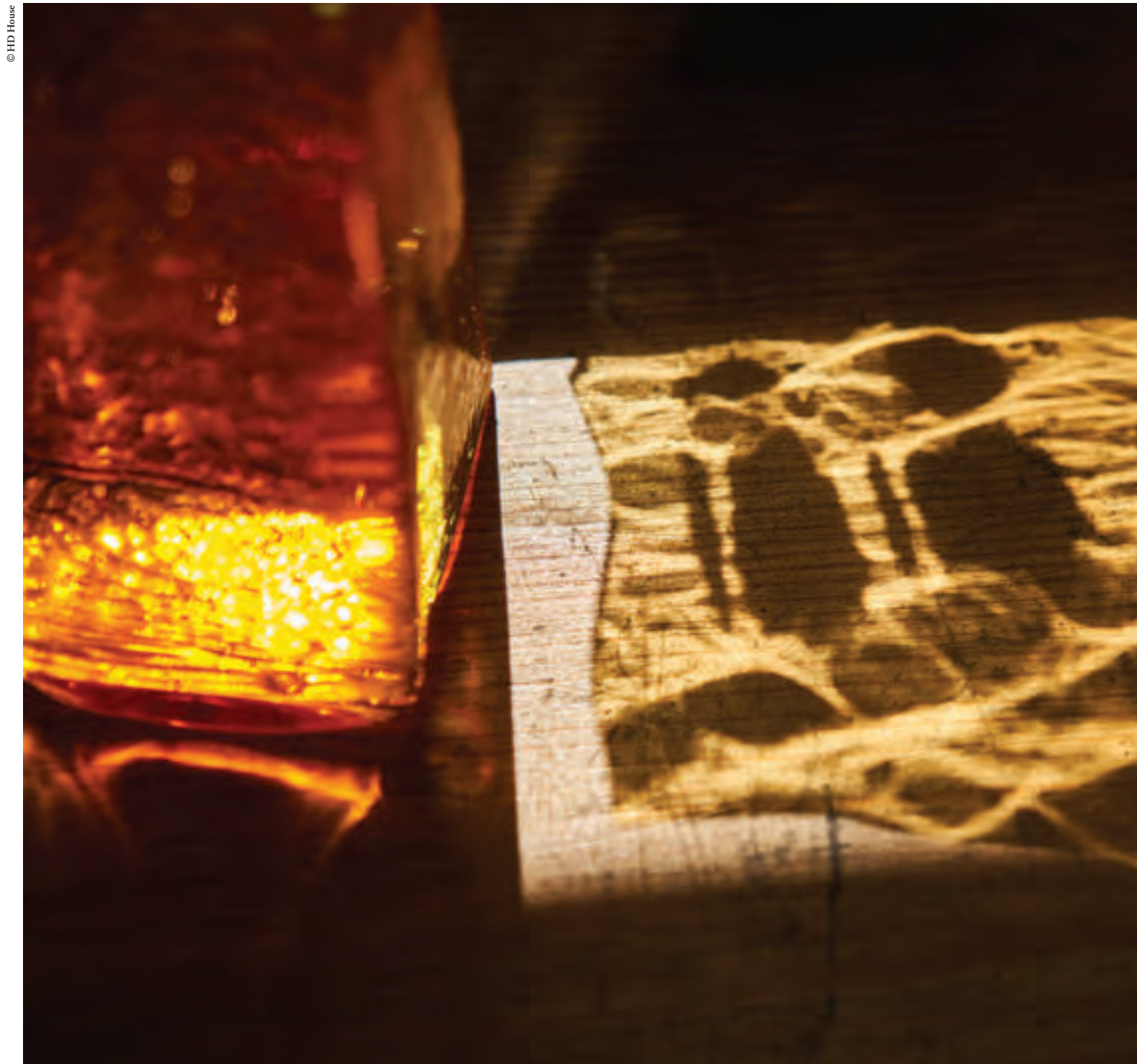
- The windows of Gothic cathedrals make a tremendous impression on modern viewers. Let us think, however, about the way they were perceived by their contemporaries, when there wasn't such a sharp distinction between a piece of coloured glass and a precious stone. To those people, these windows appeared to be made of jewels!
- Twice a year, on the summer and winter solstice, hundreds of tourists gather in Strasbourg Cathedral. At midday, a green ray of light shines through one of the segments in the stained-glass window depicting Judas onto the figure of crucified Christ. Of course, this can only be seen on a cloudless day.
- The origins of modern stained glass are unknown. Eleventh-century remnants discovered by archaeologists in Germany are technically perfect – even by today's standards. What came before that? No one knows.
- Artists working in stained glass as well as painting techniques were Henri Matisse (to Pablo Picasso's dismay) and Marc Chagall. The work of the great Polish painter Jerzy Nowosielski also includes stained glass projects.
- We often associate – quite rightly – the art of stained glass with church interiors. There are, however, extraordinary stained-glass pieces in secular spaces, too – the impressive Plafond des Galeries Lafayette in Paris, the Peace Window by Marc Chagall in the United Nations buildings or the stained-glass work by Brian Clarke at Stansted Airport.
- Archaeological research indicates that window apertures of Roman thermae were glazed with thick, greenish glass.
- In Southern Europe, where the sun is particularly intense, a common architectural feature are alabaster screens. One theory is that pieces of coloured glass set into the stonework was the beginning of stained glass art as we know it today.
- The "Space Window" at the Washington National Cathedral contains a small piece of stone brought back from the Moon by American astronauts.



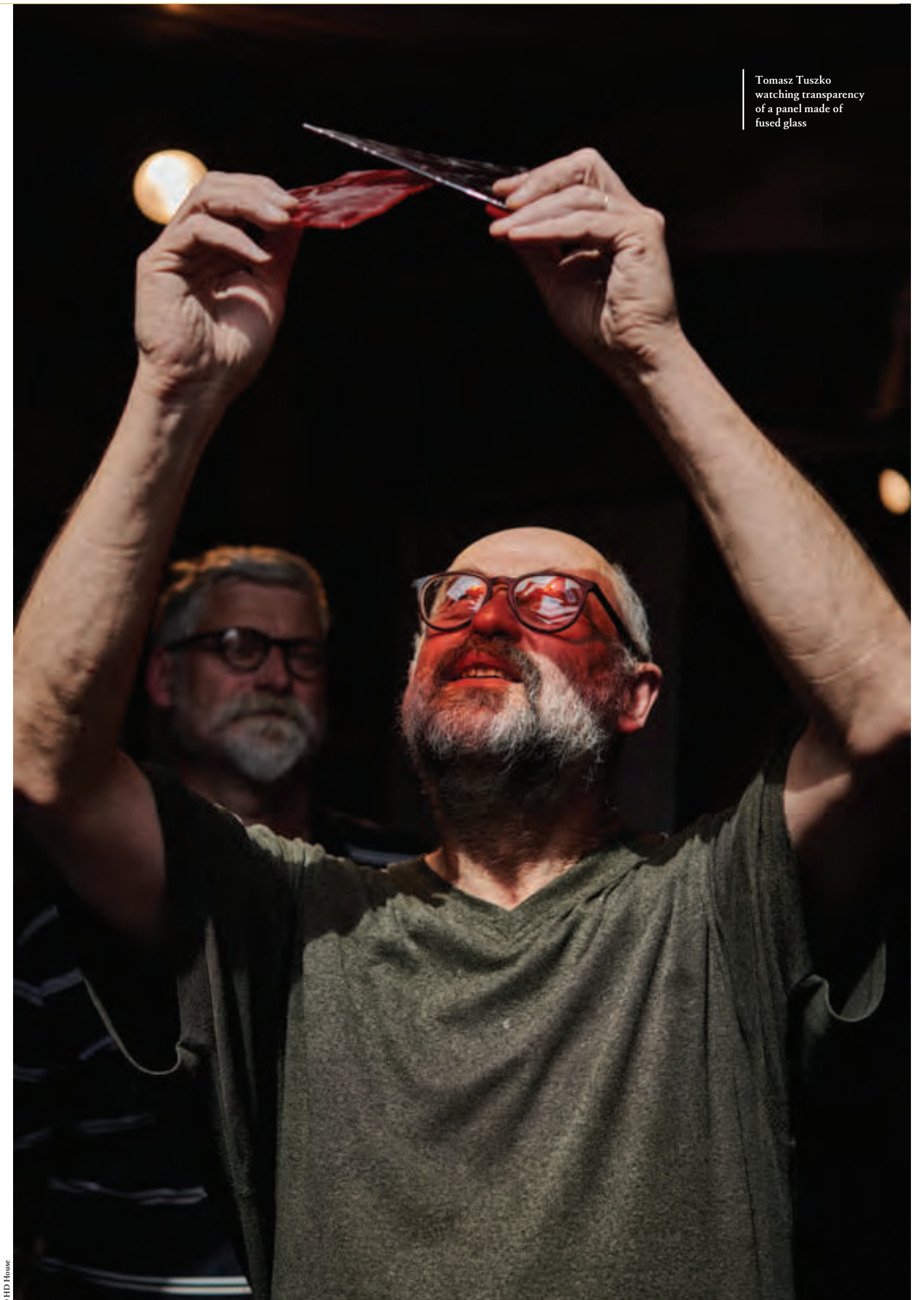
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GO FOR SHOPPING  
**DELIGHTFUL**



WHAT MAKES STAINED GLASS UNIQUE  
IS LIGHT. STAINED GLASS COMES TO LIFE  
AT THE BREAK OF DAY, ITS COLOURS DAZZLE  
AT FULL BRIGHTNESS AT MIDDAY AND  
SLOWLY FADE AWAY AS TWILIGHT FALLS.



Tomasz Tuszko  
watching transparency  
of a panel made of  
fused glass



GO FOR SHOPPING

# DELIGHTFUL



WITRAZE s.c. materials

## WHEN AESTHETICS MEETS FUNCTIONALITY

A stained-glass wall dividing two rooms by a sliding door were conceived as a single unit by WITRAZE. In order for it to attain its fullest visual potential, the decoration background is minimal. Among pastel colours and simple shapes, the stained-glass wall is the only colourful element of decoration. Dancing arches on the background of vertical planes of colour instil a tropical flare into the cool and subdued elegant interior. The panels used to make both door and wall were tempered to make them last.

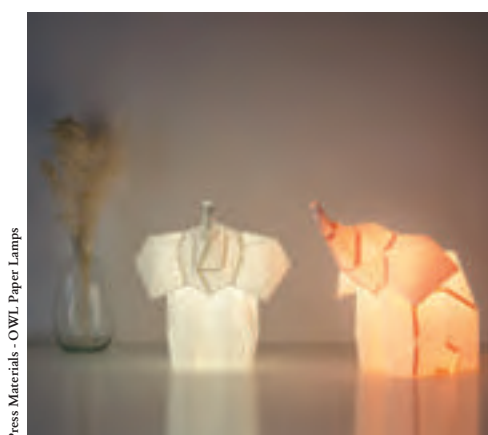
[www.witraze.info/en](http://www.witraze.info/en)

## ORIGAMI ART-INSPIRED LAMPS



Press Materials - OWL Paper Lamps

THEY'RE called OWL Paperlamps, but they don't stop at owls. You can also find tortoises, rabbits, penguins, elephants, parrots and whales in the collection of this Portuguese brand which is winning over the international market. Inspired by the secular Japanese art of Origami, these animal-lampshades are made of 160 grammes of the highest-quality paper. There's a palette of carefully-selected colours for each one, creating different and unique ambiances with the glow that comes out of these original figures. Whether it's caramel, light-blue or sandy-beige, there's a shade for every taste. The lampshades come in a DIY kit with instructions about which materials to use when putting the models together. [www.owlpaperlamps.com](http://www.owlpaperlamps.com)



Press Materials - OWL Paper Lamps



Press Materials - Agua Bendita

## COLOMBIAN SWIMWEAR CONQUERING THE WORLD

It's often out of apparently unimportant details that great ideas appear. That's what happened to Catalina Alvarez, one of the owners of Colombian swimwear brand Agua Bendita (meaning "Holy Water"): as she looked down at a waste bin full of pieces of colourful fabrics at her father's clothing factory, the fashion designer saw that beautiful bikinis could be made out of them. Marina Hinostroza joined her and that's how these Made in Colombia swimsuits which are winning over the world came about. Models Bar Rafaeli, Irina Shayk and the Portuguese Sara Sampaio have already posed with Agua Bendita's creations. Flowery, exotic and inspired in the country's culture, there are also clothing lines for men and children. The final touches come from the skill of women who, in their homes in rural areas, add embroidery and artefacts to the original design which escape the precision of machinery. The result is a happy and kaleidoscopic swim in an Agua Bendita of colour and energy.

[www.aguabendita.com](http://www.aguabendita.com)



## GO FOR SHOPPING DELIGHTFUL



## SALT FLOWER WITH NATURAL FLAVOURS

**Salmarim** salt flower comes from the salt evaporation ponds in the Castro Marim Marsh Natural Reserve, in the Faro district. In the heart of the oldest Portuguese reserve, sunlight, water and summer winds combine to bring to the surface these small pure crystals which are so enjoyed in western cuisine. Harvested using artisanal methods every day throughout the summer, which needs to be hot and dry, they dissolve on our fingers and on our taste buds, preserving the minerals offered by the Atlantic. As well as natural salt flower, the brand combines this product with other traditional aromas from Portuguese cuisine, available in four other varieties: Aromatic (with parsley and oregano), Mediterranean (with olive and chilli), Lemon (lemon and capers) and Red Pepper (red pepper, garlic and bay leaf). Each one comes with recipe suggestions by chef Henrique Mouro. While the Aromatic flavour is ideal for salads, the Mediterranean goes best with pasta and vegetable gratins.

[www.salmarim.com](http://www.salmarim.com)

## JEWELS THAT ARE AS LIGHT AS HAPPINESS

**LILOU** Paris jewellery and accessories promise you moments that last forever, and as light as happiness can be. Created in 2009 by Polish Magdalena Mousson-Lestang, the brand has stores in Poland, Germany and France. Loyal fans include tennis player Agnieszka Radwańska and German actress Sibel Kekilli, best known for her role in Game of Thrones.

Its pieces are timeless, soft and elegant, and each one tells a different story. Lilou charms can be customized with a personal engraving, amplifying their unique meaning. Names, special dates and messages, and even pictures – the look of your loved one, the smile of your best friend, an unforgettable landscape – bring these fine jewels a truly personal touch.

[www.lilouparis.com](http://www.lilouparis.com)



© Rocio Chacón



## COLOURFUL PAJAKI

Poland tradition is still alive and well when it comes to pajaki chandeliers. Believed to bring positive energy and good luck, these paper and straw mobiles decorate the homes during Christmas and Easter and are always present on special occasions, like weddings and christenings. Pajaki chandeliers were listed as one of the big 2017 trends by Elle Decoration, largely due to the work of Polish designer Karolina Merska, who has exhibited her creations at festivals, both in Poland and abroad. Karolina takes inspiration from architecture and fashion and she picks the straw herself during the summer. Then, in a game of patience, over two or three days, she creates colourful chandeliers and lends an artistic and modern twist to this traditional lucky charm. To make one single pompom, she needs many tissues. These are stacked in thirty layers, and each layer forms a small tube. Karolina Merska's chandeliers win us over with their colour, but they also surprise us by their lightness, cheerfulness and versatility, and they're even appreciated by the little ones, who enjoy seeing them hanging in their bedroom. Success has encouraged Karolina to attempt new experiences in the challenges put before her, as is the case with the three-metre-high, waterproof pajaki, made of metal, which she designed for the London Design Festival.

[www.bobbinandbow.com](http://www.bobbinandbow.com)

## COLOMBIAN ESPADRILLES

**PRACTICAL** and comfortable, espadrilles are many people's favourite footwear for the summer. These jute-soled shoes were born in Egypt to conquer the world, and they have one of their most acclaimed ambassadors in Colombian brand Castañer.

Rafael Castañer is thought to have started this family business in 1776, although the first factory only opened in 1927. They began by making espadrilles for farmers; then, during the Spanish Civil War, they made footwear for the army; and, in the 60s, due to a drop in demand for that material and to the preference for rubber soles, they turned their attention to tourists and celebrities. But their big leap came, literally, in the 70s, when a young Yves Saint-Laurent saw the espadrilles at a market and asked them to create a line for the brand. The business may have grown, but the technique which brought the brand international fame has remained the same for a hundred years. For example, men's footwear is still entirely sewn by hand in Bagnoles, a town in La Rioja, where 70 to 80 women, in their own homes, lend their know-how to these luxury creations. Made of canvas, denim or leather, with basic, army or nautical designs, replicating either the trainer or classic shoe format, this season's espadrilles for men suit any look and occasion.

[www.castaner.com](http://www.castaner.com)



Press Materials - Castaner



# MAGNIF EYE

## MORE THAN MEETS THE EYE

*OFTEN CALLED THE WINDOW TO THE SOUL,  
THE EYE IS THE ULTIMATE GATEWAY TO LIGHT.  
IT DETECTS AND WELCOMES IT, MAGNIFYING  
THE PERCEPTION OF THE WORLD. BUT THERE'S  
A WHOLE LOT MORE THAN MEETS THE EYE.*

### HUMANS

can only see a tiny portion of the light that surrounds them.

That's why, even though there are millions of gradients of almost as many colours, we can only identify seven colours in the rainbow.

That happens either because each colour bleeds imperceptibly into one another with no boundary or due to the fact that the human eye is blind to the other tones created by the sun shower. In other words, they become invisible.

All electromagnetic radiation is light but when the eye stares at the rainbow, it is only capable of capturing a small portion of that radiation dispersed into red, orange, yellow, green, blue, indigo and violet. The size of the radiation emission is what defines the brightness of the colours - for example, violet has the shortest wavelength, at around 380 nanometres, and red has the longest wavelength, at around 700 nanometres.



# TRICKY ILLUSIONS

Aristotle once said: “Our senses can be trusted but they can be easily fooled.”



Is it a rabbit or a duck?

People who can flip between both images faster are believed to be more creative.

Vision is widely accepted as our most dominant sense but people tend to mistake it for visual acuity, which is the ability to see letters in a chart, for instance. That is just a part of vision, not the whole thing.

Vision is the process of understanding what is captured by the senses and deriving a meaning from it. Of course, it all starts with light hitting the objects and reflecting off them into our eyes. Without light, there would be no sight.

However, it is our brain that actually perceives and builds the reality – or realities, since the doors of perception have as many keys as eyes and brains.

People don’t always know what they see, though they tend to see what they know. Sometimes they believe the eye plays tricks on them. But it’s not its fault. It’s a disagreement between the eye and the brain that generates a visual – more than an optical – illusion,

as it has more to do with how the brain works and less with the optics. A visual illusion is a phenomenon in which our subjective perception doesn’t match the physical reality of the world.

The classic rabbit-duck illusion is one of the most controversial.

The ambiguous figure in which the brain switches between seeing a rabbit and a duck was created by an anonymous illustrator in the late 19<sup>th</sup> century in Germany, and first published in 1892 in the humour magazine “Fliegende Blätter”. American psychologist Joseph Jastrow used it eight years later to point out that perception is not just a product of the stimulus, but also of mental activity. Curiously enough, children tested on Easter Sunday are more likely to see a rabbit, whereas when tested on a Sunday in October, they tend to see a duck. Beyond their amusement value, illusions are important tools in visual research to help scientists understand how the visual system works.

# SEEING BEYOND THE VISION

The brain puts the pieces together and makes sense of the information that comes through the eye to help us perceive the reality but they, alone, can’t give it the full picture.

Humans’ experience of the world is a multisensory one. Our senses work closely together to enable the mind to process the surrounding reality. Sometimes, one manipulates what other perceives, like when the colour of food influences smell or taste. And, sometimes – luckily, fewer times – the even cross themselves, as in Synaesthesia, a cross wiring of the senses that makes someone see colours when hearing noises, for example.

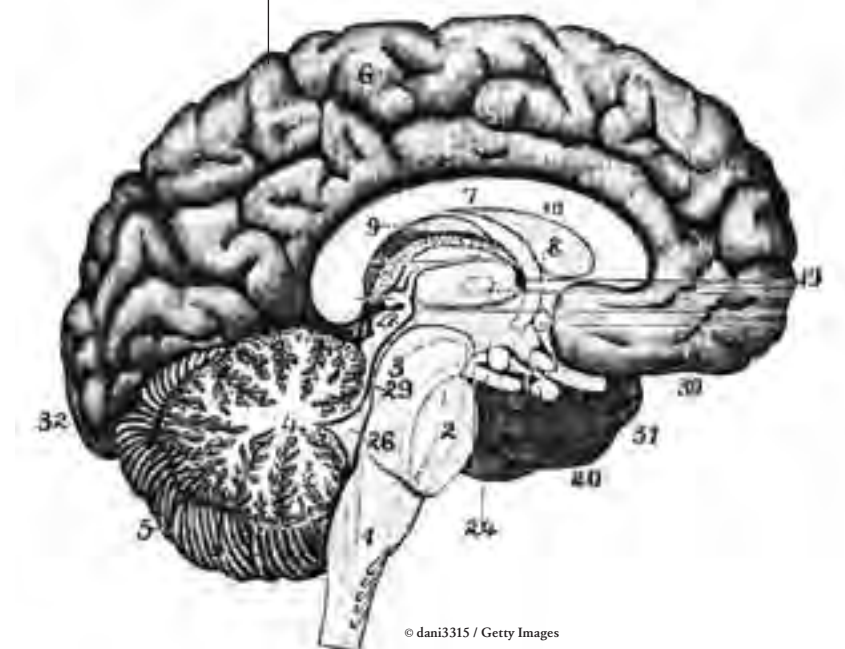
There’s believed to be more than the basic five: eyesight, hearing, taste, touch and smell. However, that principle, often traced back to Aristotle’s “De Anima” (“On the Soul”) persists, because a clearer idea of our sensory experience at the neurological level has only recently started to take shape.

In addition to the traditional big five, there is another sense that is critical for the control of our movements and our sense of self and space: this sense is called proprioception (from Latin *proprius*, meaning “one’s own”, “individual”, and *capio, capere*, to take or grasp). The ability to touch one’s nose in the darkness is a subject of proprioception, often referred as to “sixth sense”.

Some researchers might take the definition of sense further to argue that the senses should be defined by the types of receptors we have, a different sensor meaning a different sense. Splitting the senses in that way would make it even more complex, considering, for instance, humans have over 1,000 distinct olfactory receptors tuned to different odorous molecules to help them discriminate among 1 trillion different odours. Therefore, should each one count as a different sense?

## Into the Mind’s Eye

The brain makes sense of the information that comes through the eye to give us the full picture.



## THE MISSING FILE

A blind spot, also called scotoma, is an obscurity of the visual field due to the lack of photoreceptor cells. This tiny area, about the size of a pinhead, is where the optic nerve and blood vessels leave the eye. Without photoreceptor cells, the eye cannot detect light and send any information about the image to the brain. We don’t usually notice it because the brain typically fills in the missing data it needs, based on the images surrounding the blind spot.





*Sara Tadeu spent her life learning how to see without her eyes, while teaching others to always look at the light of the bright side of life.*

# SHINE A LIGHT

## WHAT

the eyes don't see is revealed to Sara by touch, smell, sound and flavour – the four senses, which combined, present her a unique view of the world. A perception that is her own, just as another person's perception is theirs alone. It is these senses that anticipate and acknowledge the arrival of her favourite season: "You can feel it's Spring, because it smells like stock flowers (*Matthiola incana*) and green".

Sara (re)cognises the colour green and the immense shades – ranging from lavender-blue to purple – of these rustic flowers that are accustomed to mild climates because, until she was 23, she could make out colours and shapes. She was born with visual impairment due to a congenital glaucoma as a result of her mother getting German measles while pregnant. She underwent multiple surgeries to control intraocular pressure and also had a corneal transplant when she was fifteen. However, while attending University and tired of undergoing so many unsuccessful treatments, she decided to accept that her progressive loss of sight was irreversible: "I had already gotten used to living with it, so I stopped going to the doctor." She completed her degree in Psychology from the University of Coimbra in 2007 and immediately set off for Lisbon to take a course to become a Physiotherapy Assistant. Along the way, she taught cooking classes and social integration skills to visually impaired youth. At the time, she was offered a job as a switchboard operator at a Jerónimo Martins hypermarket.



However, and with no solid plan in place, Sara had other ambitions and the Group was an appealing stepping stone. She decided to hand in her résumé in person at the Group's head office and, some months later, she was called to fill in a vacancy at the nursery at the Azambuja Logistics Center: "I worked with children between the ages of 3 and 4. I taught them what one usually does at that age - family and the senses, I fed them, changed their nappies..." And, before she knew it, her career as a psychologist began. "I realised there were many parents with problems and some sought me out because they had heard from the teachers that I was a Psychologist. So, I thought to myself: "This is a business community and there's a doctor's office, so why not help these people?" She submitted her idea, which was aimed mostly at "reducing psychiatric medical leave and absenteeism" in a context of economic crisis, which was increasing the incidence of depression. The proposal was well-received within the Group and Sara Tadeu began consultations, not only in Azambuja, but in Vila Nova da Rainha as well. At the end of the first year, she already had 20 patients. In 2011, she expanded her 'practice' to Jerónimo Martins' Logistics Centre in Modivas, which is close to Porto, where she was born and where her relatives live. Today, she treats over 100 employees from five units, the most recent being the recently inaugurated facilities in Alfena, in the municipality of Valongo, in the north of Portugal.



When assessing her patients, Sara prefers interaction rather than tests, and says she can see through people, despite not actually seeing them: "I can assess them based on their voice, their posture – how they're sitting, for example." Whenever she needs to refer to articles on Psychology, record information on appointments and prepare notes to share with doctors, she uses her computer's synthetic speech system, which immediately starts firing off instructions as soon as she turns it on. Four kilometres separate Azambuja and her place of work, and there is no public transportation serving the route. So, Sara usually gets a ride from a friend. When she has to travel up country, she goes by train with her daughter, Luana, who is two and a half. Being a mother was not as complicated a challenge as you'd expect: "I became an aunt at 16 and lived in a town called Vila Flor - in Trás-os-Montes, in the northeast of Portugal, where everyone looked after the children in the family. Then, my other nephews came along and I always helped my sisters. And later, I came to the nursery when I was 29 and gained a lot of experience." My husband, Hadiley, who is partially sighted, plays goalball for Sporting and has already been considered the best European player of the sport, which was created specifically for the visually impaired.

## A SPARKLING LIFE

An example of resilience and courage in the face of adversity, Sara Tadeu is overflowing with an admirable and contagious zest for life. "What I love most is family and beauty", she confides. The Jerónimo Martins Psychologist loves fashion and make-up: "Today, for instance, I have six shades of eyeshadow." The combination goes well with the colour of her hazel-brown hair. In fact, getting the colour scheme right is a must when choosing an outfit and, when in doubt, Colorino, a portable talking colour device that helps identify 150 different colours (in addition to indicating the presence of light), gives her the proverbial thumbs up. When it's time to choose what to wear, the labels in braille are also of great help. After fashion, Sara's next great passion is music: She likes to sing and has performed in public on several occasions. Cooking is another passion and her pantry is filled with spices and condiments for the African and Middle Eastern dishes she prepares for her friends: "I make Indian curry, chicken in peanut sauce..." She has the same voracious appetite for reading: "I read a lot, especially historical novels, crime novels and adventure stories." It's natural to try to identify with the stories (and characters) in books. If the books Sara reads were a reflection of her own life story, they would most certainly be narratives filled with light. A light that emanates. A light that helps others to see. But only because she is able to see: "For me, light is joy, positivism, resilience, change. Enlightenment makes us want to change, does it not?"

Sara is a psychologist for the employees of Jerónimo Martins' Logistics Centres.



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## SARA TADEU

*"For me, light is joy, positivism, resilience, change. Enlightenment makes us want to change, does it not?"*

### INCLUSION THROUGH WORK @Jerónimo Martins

Sara Tadeu's story is not unique at Jerónimo Martins. Over the years, the Group has opened its doors to people with disabilities through training and employment, thus encouraging egalitarian access to this segment of the job market. In 2006, a partnership with ACAPO (Portuguese Association for the Blind and Partially Sighted) accelerated this endeavour for inclusion: nearly 30 visually impaired people have been hired as part of the protocol. Other partnerships have been established with institutions such as APSA (Portuguese Asperger's Syndrome Association), Casa Pia de Lisboa (State Children's Home Charity), SEMEAR (Institution for people with intellectual and development difficulties), and FOCUS (targeted for young people with significant disabilities), within the context of which the Group has employed 110 people with various disabilities.



# SHINE ON

## IT STARTED

out as a design project but, in a flash, became a mission: to fully preserve the legacy of the golden years of neon. “We wanted to tell the city’s visual story using business signs, so we started taking photos of the signs that were still up in downtown Lisbon. We’d go every other week. Then, we realised that the signs were disappearing and felt an urgent need to rescue them before they were tossed out”, said Paulo Barata. He and Rita Múrias – who, in addition to being his partner on this project, is his wife – decided, from that moment on, that whenever they came upon a decommissioned sign or one from a store that was about to close, they would do what they could to save it from the same fate. And, thus, began the collection which now includes over one

hundred and fifty specimens: “We have about 150. 80% are neon signs, but we also have shutters, reverse glass signs, metal letters, light boxes...”, says Rita. Among them is the iconic Ritz hotel sign: “It’s the actual original, created at Pardal Monteiro’s studio in 1959”, she emphasises. “They decided to change it because it was damaged.” The signs were on display in the temporary exhibition “Graphic City”, as a result of a partnership with MUDE - Design and Fashion Museum, within the framework of the project “Letreiro Galeria” (meaning “Gallery Sign”), and are now stored in a warehouse waiting for backers to help fund the creation of an exhibition space where everyone can “enjoy this visual memory”; much like at the Buchstabenmuseum in Berlin, the first of its kind in Europe.





© Maria Correia

The letters of the Ritz Hotel were a major attraction at the “Cidade Gráfica” [Graphic City] Exhibition held in partnership with MUDE, the Design Museum, and the Lisbon City Council, as part of the Neon Sign Gallery Project collection, curated by designers Rita Múrias and Paulo Barata

“All of a sudden, there was a festival of light, with the carriages on carousels seemingly moving and horses appearing to be trotting.”

Paulo Barata

Taking down the letters of the Ritz Hotel was only possible with the help of lighting and signage company Neolux. Several teams were needed for the logistics of rescuing the letters. Each letter was 2.5 metres tall, weighed 80 kg and had to be lowered from a 10-storey building of one of the city’s most emblematic hotels.



© Rita Múrias

Praça D. Pedro IV (Rossio), circa 1950s-60s  
Photograph from the Lisbon Municipal Archive



© Arquivo Municipal de Lisboa, Arquivo João Goulart Collection, PT/AMLSB/AC/S01838

Letter manuals were used as inspiration to design neon lights.



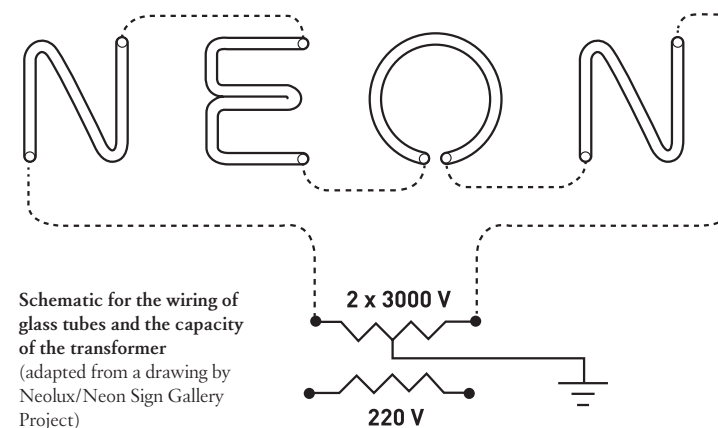
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## RELIGHTING THE NEON GLORY

With the debut of neon in the early 1940s, Lisbon sought to reclaim its status as a metropolis and, in a way, it did – if not in essence, at least in appearance. The magical glass tubes shone brightly across half a century and the designers still got to see them in all their glory during their early childhood and adolescence, which lit the fuse that ultimately fuelled their project: “In the beginning of the 20<sup>th</sup> Century, Rossio was a flurry of gas lighting and by the 50s neon lights were flooding the streets,” says Paulo. “All of a sudden, there was a festival of light, with the carriages on carousels seemingly moving and horses appearing to be trotting about, the Ovomaltine straw sipping milk... Those who didn’t live in Lisbon and came to visit were left in awe. People would flock to the city just to see the lights.” Rita states: “As a child, I would love going to see the Christmas lights in the city with my parents. And, when it was raining, I used to love seeing the reflection of the neon lights on the street because it had an iridescent effect and would fill everything with colour. It’s a childhood memory I’ll never forget.”

At the time, a bright sign was in itself an indication of the success of any business. Success was often measured by the technological boldness and extravagance of the pieces which were akin to unique works of art that bestowed a typographic identity on the city. Haphazard and “gaudy”, but, nonetheless, an identity and full of charm: “In Portugal, we don’t have much of a tradition when it comes to good typographic design or calligraphy. When design was autonomous, spacing wasn’t done very well, and lettering was a bit exaggerated. When lettering manuals were followed, things were different. Today, we have more resources and lettering is designed properly, but one can see in the finishes, in the light boxes with the names of banks and of restaurant chains that we’re losing the urban typographic identity that was once cherished. Logos are the same here, in Braga and in London,” explains Rita. LED has replaced neon, which is slowly disappearing in a century lit up by other lighting, from a globalised world, making a comeback impossible. This is something the designers accept quite naturally, as their commitment is to the past.

On a stroll through the streets of downtown Lisbon, reminiscing about the heyday of the technological innovation, it’s easy to spot signs above stores they don’t belong to. Stores which have replaced those for which the signs were designed. But there are also establishments that have incorporated them as decorative elements, such as Pub Lisboeta. Interestingly enough, many refer to it as Pub Lucília because of its bright orange sign, which once adorned the walls of a beauty salon. “One day, Lucília’s granddaughter came by and was quite moved because she recalled seeing the sign in her grandmother’s salon,” says Paulo. For Rita, hearing these stories usually leaves her with “mixed feelings” as the joy she gets from finding the signs is dampened by the sadness store owners express when they see the artisanal works of art that once stood as a testament to their success taken down. However, if history is anything to go by, the real light, the one that has shone brightly for generation upon generation, the light in the stories yet to be discovered and told, will never go out. ►



Schematic for the wiring of glass tubes and the capacity of the transformer (adapted from a drawing by Neolux/Neon Sign Gallery Project)



# NEON STORIES



## DURBEL

Former bag store on Rua da Prata, in Lisbon. When a neon sign is taken down, first the glass neon tubes are removed and then the metal sheet is disassembled.

© Maria Corréa



## WAITING FOR FREEDOM TO SHINE

“I once went to a warehouse that belonged to a man who worked for a lighting and signage company. And when he saw the sign for the optician Oculista Machado, he made quite the fuss. On 25 April 1974 - on the same day the Revolution ended dictatorship in Portugal and marked the beginning of the country’s transition to democracy - he was sat on top of the sign, fixing it, and someone told him that a huge revolution was afoot and that he had to come down, that a curfew had been imposed”, tells Rita Múrias.

## FOR THE SAKE OF HISTORY

There was an optician on Rua da Prata that had a store in a stairwell, which is becoming rarer in the city nowadays. The owner started working in the store when he was 12. He was an apprentice for two years and spent his entire life working there. Then, the original owner, his mentor, passed away. The daughter gifted the store to the apprentice and he changed the sign to have his name on it, which is followed by ‘Formerly owned by master such and such’, the former owner... In the meantime, the man also died, and the lady who managed the store for another 15 years then decided it was time to close a store that had been around for 70 years.

Optician store Oculista Machado had neon signs from several time periods from the 1950s to 1960s on its store front, produced by different manufacturers and designed in various styles.



© Photo Adriano Fagundes

*“We realised that the signs were disappearing and felt an urgent need to rescue them before they were tossed out.”*

Paulo Barata

© Maria Corréa



## THE RIVER CONTINUES TO GLEAM

The restaurant Brilha Rio [“Gleaming River”] closed and it stayed inside. “I spoke with the man and explained our project to him. He didn’t want to give me the sign, but he also didn’t know what to do with it. A year later, he suddenly called and told us to pick up the sign the next day. We were preparing the ‘Cidade Gráfica’ [Graphic City] exhibition with MUDE at the time, and the sign was put on display. The gentleman had been ill for some time and, when he learned about the exhibition, I called him and he went with his family. It was a surprise for him to see that the sign had been transformed into an industrial design piece, with his story”, Rita recalls. The sign that had been decommissioned was shining brightly once again. ●

Detail of the sign from Lisbon’s Brilha Rio restaurant, rescued in 2015.



# LIGHT IS RIGHT

*Food habits are changing  
and so is our food, both on the inside  
and on the outside. And the lighter  
it is, the healthier it gets.  
For us and for the planet.*



# on the **OUT** SIDE

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*Developing goods while preserving the environment is no utopian dream. Jerónimo Martins' investment in the ecodesign of its Private Brand products has been proving that the circular economy is not just a vision, but rather a real path.*

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© Patrick Foto / Getty Images

## A LIGHTER APPROACH

**ALL** products have an environmental impact, at any point in their life cycle, but estimates suggest that more than 80 % of these impacts are determined at the design stage. If we consider that Europe alone produces 25 million tonnes of plastic waste each year and that 66 % of this comes from packaging, the debate about ecodesign - design for sustainability - takes on an urgent tone.

Ecodesign is a design approach which, in a systematic and holistic way, incorporates environmental considerations into the process of developing a product, without sacrificing its quality, safety, functional features, visual appeal and other aspects. In practice, the aim is to make packaging more environmentally friendly, which means thinking of it in its entirety. This process

starts by selecting materials that can be firstly recycled and reused, and then afterwards using less of them reduced in total. Companies, consumers, Governments, institutions, NGOs. All of these are agents of change in championing this new approach, because they all have a stake in its success. For example, when a company

redesigns its packaging in order to reduce not just its environmental impact but also its production costs, it can pass this on to its retail prices, which benefits the consumer. And consumers have the chance to make a deliberate choice to buy an article with eco-designed packaging, and to reject other, more polluting options. This in turn puts pressure on distributors and suppliers.

In January this year, the European Commission launched the European Strategy for Plastics in a Circular Economy. This pioneering document lays down that by 2030 all plastic packaging in the European Union market must be recyclable. It also aims to put an end to disposable plastic packaging in the European Union, switching to recyclable and reusable plastic as a raw material, and to limit the use of microplastics. This new boost for ecodesign will shortly be formalised with the review of the Packaging and Packaging Waste Directive. In Portugal, the Government is looking into its own measures in the new plastics economy, such as offering tax breaks, imposing charges and placing signs at retail outlets that meet high standards in this field.

Caring for the environment is one of the fundamental pillars of the corporate Responsibility strategy pursued by Jerónimo Martins, which has identified waste management as one of its priorities for the future. The Group has been working hand in hand with its suppliers to make their packaging more eco-efficient, for two crucial reasons: to reduce the environmental impact of the packaging for its Private Brand products, and also to optimise the costs of production, transport and management of packaging waste. This is a process that reaches into every corner of the product's life, from manufacture through to its after-life, taking in transport, packing and display, involving all the operators in the supply chain. A new Ecodesign Manual explains the principles to be adopted by the Group. Since the project started up back in 2010, these joint efforts have been applied to more than 270 Private Brand products for Pingo Doce, Recheio (Portugal) and Biedronka (Poland), which has already saved around 60 thousand tonnes of materials and avoided carbon emissions totalling 11 thousand tonnes in transport.

## PREPARING THE FUTURE

**I**n the Jerónimo Martins Group we believe that preserving the environment is essential for sustained growth in our business. In view of our size, we accept responsibility for making effective connections between supply and demand and establishing sustainable supply chains. That's why we're always looking for chances to do more with less, and ways of making the weight of our operations as light as possible, in terms of their environmental impact. This mindset means that we encourage and nurture environmentally sound and eco-efficient practices throughout the supply chain, seeking to make operations more efficient, and so generate added value for the different business operators involved. These were the aims we had in mind nine years ago, when we launched this project for eco-designed packaging for our private brand products, in a process that involves working as a team with our suppliers. Only with stable and lasting partnerships is it possible to travel the road to true sustainability, hand in hand with our business partners. Nearly a decade on, we are proud to see our endeavours win plaudits from international organisations and our achievements mount up, revealing a clear win/win situation for everyone involved: the company, suppliers, customers and, of course, the environment. With a history in the food sector dating back more than 225 years, this is the long-term view that means we can prepare now for the future of the generations to follow us.

### FERNANDO VENTURA



HEAD OF EFFICIENCY AND INNOVATION ENVIRONMENTAL PROJECTS AT THE JERÓNIMO MARTINS GROUP



### For a deeper look at Ecodesign

For those interested in the theme, "Environmental Footprints of Packaging" is a must-read. The book discusses the sustainable design of various packaging materials and systems and its environmental footprints. Available at [amazon.com](https://www.amazon.com).



## NECTARÍSSIMO FRUIT JUICES

The 1-litre bottle diameter was narrowed down from 90mm to 85mm, turning it into a more cylindrical rather than conical shape. The new bottle has allowed a 10% reduction in primary packaging weight – 2,661 kg/year – and done away with the need for a cardboard pallet stabiliser. The changes have avoided transporting 6 thousand pallets each year and the emission of 345 tonnes of CO<sub>2</sub>. Aiming for continuous improvement at the packaging redesign of this particular product, Jerónimo Martins is preparing a new reformulation.

# HOW A SMALL CHANGE CAN MAKE A BIG DIFFERENCE

85 mm



**-5 mm**  
in diameter

**-345 tonnes**  
of CO<sub>2</sub> emissions

**10% reduction**  
in primary  
packaging weight

**- 6,000**  
Pallets used  
in transportation

**Elimination**  
of the cardboard  
pallet stabilisers

**-155 230 kg**  
of plastic per year



## POLARIS WATER

The change of shape and thickness of the bottle of water Polaris 1,5l (sparkling and still) had a considerable decrease in plastic use.



## FROZEN READY MEALS

The packages have been replaced by a flowpack format, resulting in a reduction of 60% in primary packaging weight – 12,186 kg/year – and a 5% reduction in secondary packaging weight – 1,784 kg/year.

**60%**  
reduction  
in primary  
packaging weight

**5%**  
reduction  
in secondary  
packaging weight







# on the **IN** SIDE

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*Jerónimo Martins is committed to promoting responsible consumption and health through food. Being an active agent in the change of eating habits implies, on one hand, investing in nutritionally balanced, Private Brand products and, on the other hand, meeting specific dietary needs, including intolerance to certain ingredients.*

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## FINDING THE BALANCE

**AS** the old saying goes, *we are what we eat*. It's one of the ironies of modern culture that someone who eats enough can still be malnourished. Eating habits that result in poor nutrition include: under- or over-eating, not eating from all the food groups, consuming too much fat, sugar and salt or eating foods which are non-nutritive. A healthy diet can reduce the risk of heart diseases – the main cause of death worldwide –, cancer, diabetes and other conditions linked to obesity, which is considered an epidemic of the 21<sup>st</sup> Century. According to the World Health Organization (WHO), obesity has nearly tripled since 1975. 39% of adults aged 18 years and over were overweight in 2016, and 13% were obese. The number of overweight or obese infants and young children (aged 0 to 5 years), reached 41 million people globally in the last 27 years an increase of 28%. And the estimates is that it will cover 70 million by 2025. Another worrying data is that 2.8 million people die each year as a result of being overweight or obese. Thinking about the importance of food in humankind's longevity, ever since Antiquity this has been in the frontline of health and

wellness perspective. Hippocrates said “Let food be thy medicine and medicine be thy food”. Or in other words: how can food be a simple, easy access to a healthy life? A poor diet is a big factor in each one in five deaths around the world. The good news is they can be prevented. Governments, international partners, civil society, Non-Governmental Organizations and, of course, the private sector all have a vital role to play in this regard. At Jerónimo Martins we have set the promotion of good health through food as the first of its five Corporate Responsibility pillars, and that responsibility has now increased by a legacy of more than 225 years of history. Fostering food quality and diversity and ensuring food safety is the Group's main commitment. In order to guarantee the high standards of quality and safety of the products it sells in Portugal, Poland and Colombia, Jerónimo Martins has established its own Nutritional Policy for Private Brands, aligned with the WHO recommendations regarding ingredients, portion sizes or labelling among others.

## A PURPOSE THAT MOVES US

**CARLOS  
SANTOS**



PRIVATE BRAND  
DEVELOPMENT AND  
QUALITY DIRECTOR AT THE  
JERÓNIMO MARTINS GROUP

**WE ARE NOW  
IN A BETTER  
POSITION TO  
GUARANTEE THE  
AUTHENTICITY  
OF OUR  
PRODUCTS.**

**THE** democratisation of access to quality food is one of the purposes of the Jerónimo Martins Group, and its Private Brand products is its highest expression of this. With over 3 700 food distributions stores across three countries, we are responsible for the daily food needs of 5 million people who trust the food quality and safety of our products. The recognition of the role that food habits play in preventing diseases such as diabetes, obesity, osteoporosis and cardiovascular illnesses is one of the factors that move us. That's why we are committed to promoting Health through Food. Aware of this responsibility, in 2009 we began a process of continuous improvement of the nutritional value of our produce – according to a detailed plan and in line with the priorities set by the World Health Organization – and the results to date enable us to prove that we have contributed in a very positive way to the health of our consumers. Our performance strategy is guided by three main goals – using genuine and high-quality ingredients, continuously improving nutritional values, and disclosing full, up-to-date and correct information about our products' composition. In terms of the ingredients we use, the biggest challenge we face today is fighting fraud consisting of replacing ingredients with similar, lower-quality ones. Thanks to increasingly more advance methods of analysis – including non-directional molecular biology, for example – we are now in a better position to guarantee the authenticity of our products. Continuously improving nutritional values is a gradual process which relates mostly to mass consumption products – for their general positive effect –, such as products aimed at children and those which might be perceived by the consumer as healthy. In terms of reformulation, our efforts are focussed on reducing salt, fats, saturated fats, hydrogenated fats, sugar and additives, on developing free-from and light products, and on products aimed at alternative consumption. Any reformulations are compared with the non-reformulated product by consumer panels through blind-testing, and lower ratings are not acceptable. Carrying out these reformulations is an exercise in resilience which requires commitment from both our teams and suppliers. Lastly, how important informed buying is for us. Transparency is in Jerónimo Martins's DNA and the information we disclose to our customers is a testament to that. All quality, nutritional or health claims in our branded products are validated periodically by accredited laboratories. All ingredients in our products are declared, regardless of their percentage, which goes beyond legal requirements. As food specialists, we believe that this is the only way to play an influencing part which truly contributes to improving the quality of life of the people in our societies.





The Portuguese Custard Pie is one of the country's most famous and oldest desserts. It is a smooth and creamy egg tart pastry with lemon and cinnamon notes. Made in Portugal and using only home-produced milk, this variety was developed for people with celiac disease.

**GLUTEN-FREE**  
**"PASTEL DE NATA"**

Stevia is a popular calorie-free sugar substitute extracted from plants whose popularity has been growing since the 80's. Composed of 70% cocoa, this chocolate bar from the Pura Vida range is sweetened with pure Stevia and contains no added sugar. It is also high in fibre, magnesium, phosphorous and iron.



**CHOCOLATE**  
**WITH STEVIA**



Low in sugar and calories and fat-free. Fortified with up to 12 vitamins and minerals.

**CEREALS**  
**FOR KIDS**



**GLUTEN-FREE**  
**RICE**  
**DRINK**



Unbeknownst to most, gluten is hidden in several kinds of beverages, including plant-based milk alternatives. Those who are looking for a rice-based milk beverage that suits the gluten-free diet might now turn to this option. It is a great source of calcium and several vitamins of GMO-free origin and contains no added sugar.



**HOW WE**  
**ARE MAKING IT**  
**LIGHTER**

In 2017, new Private Brand products with potential health benefits hit the Group's stores, while others changed their recipes, by reducing the levels of salt, fat, sugar, preservatives and other artificial ingredients, and adding greater amounts of fibre, fruit and micronutrients. Here are some important innovations.



**HEIL CORN**  
**AND RICE**  
**CRACKERS**

With sea salt and low in salt and calories. Fat-, sugar- and gluten-free.



**AFFORDABLE MILK**  
**PORRIDGE**

Jerónimo Martins's approach to nutrition also encompasses initiatives that add value to the communities in which the Group is present. A successful example is the unique "Partnership for Health", consisting of Biedronka, Lubella, Danone and the Polish Institute of Mother and Child. By the time it was formed, it aimed at launching a special product to meet needs of Polish children from low-income families. In Poland, 64% of the families with children spend less than €3.2 per person per day on all expenditures including food. That determination resulted in the development "Milk Start", a "milk porridge" product based on semolina and milk. Served in 60 gr single sachets and easy to prepare, the Milk Start is available in two flavours, raspberry and banana. One bowl of this beverage contains 25% of the recommended daily intake of vitamins and minerals including vitamin D (responsible for building bones); iron and vitamin C (prevents anemia); zinc and vitamin E (supports immunity); and magnesium and vitamin B6 (necessary for concentration). Over the last 10 years, Jerónimo Martins has sold more than 200 million units from this product range, without any associated profit.

Superfood's benefits prove they are not just hype. For those who like to have a whole week of meals ready to go, mixing them with vegetables is always a very healthy (and quick) idea. These Mrożna Kraina mixes are available in three varieties: quinoa, wholemeal rice, and sunflower with flax seeds, great sources of protein and fibre.



**SAUTÉED**  
**VEGETABLE**  
**MIXES**



**FOOD PRODUCTS**  
**REFORMULATIONS**

Between 2015 and 2017, by reducing, replacing or eliminating less healthy ingredients from either our Private Brand products or food solutions, the Group prevented from reaching the consumer:

**988 TONNES**  
of fat

**525 TONNES**  
of sugar

**164 TONNES**  
of salt



**TRADITIONAL**  
**FILLED**  
**PIES**  
**PIEROGI**

The levels of fat were reduced in 21 references of Biedronka's exclusive brands. In the steam varieties of Swojska Chata pre-cooked pies, a Russian recipe filled with mushrooms and cabbage, the fat was reduced by between 10% and 30%, totalling 78 tonnes.

**LACTOSE-**  
**-FREE**  
**FRESH**  
**MILK**

37% of the Poles are lactose intolerant, which makes this launch a notable highlight. The Mleczna Dolina Fresh Milk is the Private Brand in Poland for people with lactose intolerance.





# BENEATH THE GLOW

*Rare among plants and animals that live on land, the ability to generate light is much more common underwater, where three quarters of the living beings are bioluminescent. These organisms produce their own glow as a tool to attack, defend or mate, creating a unique spectacle of radiant colours.*



# GLOWING BEAUTY

## Crystal glow

More than half of all jellyfish species produce some kind of bioluminescence, largely as a deterrent to predators. They light up the ocean mostly in blue, which is the colour that travels more in seawater.



## JELLYFISH

that light up in an electrifying dance, fish with eyes that become flashlights, light-blue waves of phytoplankton that replicate starry skies. Celestial bodies with their own light, bioluminescent beings that glow in the darkest depths of another solar system, the ocean floor. Despite only being understood and named at the end of the 19th century, these fancy neon lights have, in themselves, been a unique and beautiful phenomenon since the beginning of time. Shakespeare didn't put much thought into naming it because Art has the power to create and shape its own Science and, so, he referred to the Bioluminescence of the

glow-worms in Hamlet (1609) as “uneffectual fire”. What escapes our poetic gaze is that what for us mere mortals is a display of intense colour is, in fact, an essential part of the lives of animals and plants born with this trait. The cold light they reflect both attracts prey and helps them escape from predators, and it aids in communication and courtship. Rare in land organisms and practically non-existent in freshwater - because of its turbidity and diminished biodiversity –, bioluminescence is quite common in the ocean and the deeper one dives, the greater the sea of light we'll find: Three in every four marine animals are bioluminescent.

## BUT... WHAT MAKES THESE MAGICAL BEINGS SHINE?

In most cases, the process requires a light-emitting pigment, luciferin, and an enzyme, luciferase. The interaction of the latter with oxidized luciferin creates a by-product known as oxyluciferin. That by-product is the bright light emitted by bioluminescent creatures. The organ used by many deep-sea fish and cephalopods is the photophore, usually placed on the ventral and lateral surfaces of the body. Sometimes, species that do not synthesize luciferin take in bacteria or other bioluminescent creatures so they can light up. The same way that not everything that glitters is gold, not everything that glows is bioluminescent. Some organisms, such as corals, just fluoresce. This means they absorb light at one wavelength, such as UV radiation, and emit it at another wavelength. Something very similar happens with the ink used in highlighter pens or in glow-in-the-dark stickers.

## WHAT COLOUR IS BIOLUMINESCENCE?

Whereas most terrestrial organisms, like fireflies, have a yellow bioluminescence colour, most of the bioluminescence produced in the ocean is in the form of blue-green light. This is because light traveling from the sun of longer wavelengths—such as red light—doesn't reach the deep sea. Though, some animals, such as the Dragonfish (Mala-costeus), have evolved to emit and see red light to gain the ability to detect red-coloured prey and show them to other dragonfish. Few organisms can glow in more than one colour. The glow-worm may be the most familiar exception. Its head glows red, while its body emits a fiery green light through eleven pairs of spots arranged in two rows, resembling the windows of a miniature train at night. Because of that, these beetles are often referred to as railroad worms.

## WHY DO ORGANISMS GLOW?

Bioluminescent animals and plants use their gift for a variety of reasons. Some do it to lure the opposite sex for mating or to search for prey. The most famous predator to use bioluminescence may be the anglerfish. It has a huge head and sharp teeth. On the end of its head, there is a long, fleshy growth and a ball (called the esca) that this angry-looking fish can turn on. Attracted by that lantern, the prey swim in for a closer look and, by the time it sees the razor-toothed jaws of the anglerfish, it is too late. Nemo and Dory had better luck in the Disney film that made this nightmare-inducing creature famous.

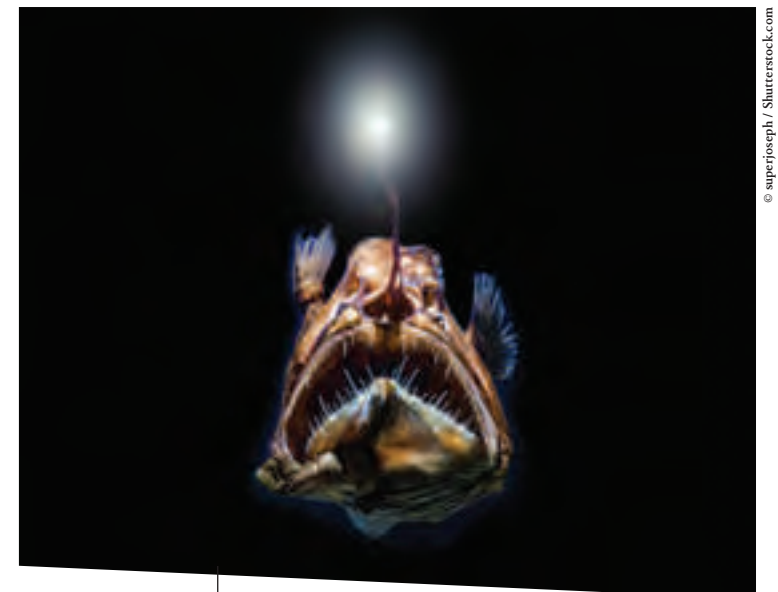
Often animals use light to confuse and scare off predators. That tactic is very common in marine invertebrates. Brittle stars, for instance, can detach their glowing limbs to distract the predator from their main body. Sometimes, when animals break off the luminescent parts of their bodies, they detach them onto nearby fish. By doing that, some species of sea cucumber crawl away, while their predators follow the glow on those fish.

Many predators, such as sharks, hunt from below. They look above and take advantage on the shadows sunlight creates beneath prey. In response to this predatory behaviour, a lot of marine species use a camouflage technique called counterillumination. Their photophores point downward, adjusting the amount of light coming from there to match the light that penetrates from the surface. The hatchetfish, which gets its name from the distinct hatchet-like shape of its body, is a great example.

The Cypridinid ostracod, a tiny crustacean found only in the Caribbean, uses bioluminescent signals on the upper lip to attract females. About an hour past sunset or later at night after moonset, males swim into the water column and release coded blue trails of luminescent pulses that seduce females. Each ostracod species has a unique light pattern.

“Some things which are neither fire nor form of fire seem to produce light by nature”

Aristotle



## The ang...ry show

Up to a mile below the surface of the Atlantic and Antarctic oceans, there are more than 200 species of this angry-looking fish. It is called the “Anglerfish” due to the angling-like rod in the first spine of its dorsal fin.

## BIOLUMINESCENCE, A MODERN SCIENCE

Despite being known to Aristotle and having been studied by notables as Francis Bacon and Robert Boyle, bioluminescence was not explained until 1887. That year, French physiologist Raphaël Dubois extracted juice from clams that were graced with light and discovered two substances which, when mixed, were responsible for the glow. He named luciferin after “Lucifer”, a Latin word which means “light-bringer”, and called the other luciferase to indicate that it had the properties of an enzyme. Shortly after, the research on Bioluminescence was popularised by U.S. zoologist and physiologist Edmund Newton Harvey (1887-1959), acknowledged as one of the leading authorities on bioluminescence. He is the namesake of two kinds of glowing bacteria - *Achromobacter harveyi* and *Vibrio harveyi* - and a species of firefly - *Photinus harveyi*. In 1922, he built a heat-less reading lamp using luciferins from dead crustaceans.



*FISH, SQUID, JELLYFISH, SEA SLUGS.  
A DAZZLING RANGE OF CREATURES  
HAVE THE ABILITY OF GLOWING  
IN THE DARK.*

## Purple rain

There are more than 2,000 known species of nudibranch throughout the world's oceans, though they are more abundant in tropical waters. Some species of these shell-less mollusks, part of the sea slug family, are bioluminescent. Here is an example of nudibranch of the genus *Flabellina*.

## Red eye-liner

In addition to the blue bioluminescence typical of most deep-sea animals, three genera of deep-sea loose-jawed dragonfish also produce far-red light and shine it ahead, like a spotlight. These fish use their flashing lights to attract prey and signal potential mates. In spite of their gruesome appearance, they only measure about 6 inches (15 cm) in length.

## Combing waves of colour

Many ctenophores, like other planktonic organisms, are able to bioluminesce. These gelatinous animals often mistaken for jellies look like luminous prisms when they spread waves of colours in the ocean. And as they move, their eight comb rows scatter the light producing a beautiful rainbow effect.

## Moonlight mimickers

Hidden in the sand by day, this adorable tiny squid houses bioluminescent bacteria on its underbelly and uses it to mimic the moonlight, making its silhouette less visible to predators lurking below. This method of camouflage is an example of counter-illumination.

## Cloudy blue

Despite measuring around two millimetres in size, these minuscule crustaceans are of great importance in the earth's marine ecosystem, providing food for many species of fish. The bioluminescent chemicals they release into the water produce a glowing cloud of light. That bright smoke is used to distract or blind attackers.

© Dave Fendley / Getty Images

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# OCEANÁRIO DE LISBOA A BEACON OF LIGHT IN OCEAN CONSERVATION

*The world's best aquarium  
has just celebrated twenty  
years and today, as in  
1998, its mission remains  
unchanged: to democratise  
the knowledge of the sea  
and to promote the Ocean  
conservation.*

**“THE** oceans: a heritage for the future” was the theme of Lisbon’s World Fair - EXPO’98 – which over four months attracted 11 million visitors from all over the world to celebrate the 500 years of the Portuguese voyages of discovery. At the epicentre of the Expo’98, the Lisbon Oceanário was designed by the celebrated architect Peter Chermayeff. The total equipment installation area spans for 20 thousand square metres and comprises 7.5 million litres of saltwater that are home to 8 thousand organisms from 500 species. The central aquarium represents the Global Ocean, housing more than 100 species from four oceans. Around it, four sea habitats create the illusion that we are facing just one aquarium, one ocean. It is today one of Lisbon’s main tourist attractions and over its life has welcomed more than 23 million visitors from 180 countries. Twice voted the best in the world (the second time in 2017) on TripAdvisor Travellers’ Choice, it got more than 32,500 positive reviews, of which 64% classed it as “Excellent”. In 2015, the Oceanário de Lisboa was privatised for a 30-year concession contract and is now run by the Oceano Azul Foundation, owned by the majority shareholder of the Jerónimo Martins Group. The Foundation brought a fresh approach to managing the Oceanário. By pledging to reinvest its profits, it breathed new life into its work and recommitted the institution to its vital mission. In an interview with Feed, the Oceanário’s CEO, João Falcato, tells us about the challenges of ensuring that visitors enjoy a unique experience and underlines the importance of the “blue literacy” for younger generations.



# 20 YEARS PROTECTING THE LESS EXPLORED PLACE ON EARTH



© Paulo Amorim / Gettyimages



JOÃO FALCATO

Having joined the Oceanário de Lisboa as an aquarist, in 1997, João Falcato is its current CEO since 2006, and part of the Board of Directors of Oceano Azul Foundation. He is a member of the Directive Board of the Portuguese Association of Zoos and Aquaria and administrator of SIEOCEAN. João Falcato is also a member of the Executive Committee of EAZA (European Association of Zoos and Aquaria), and President of the EUAC (European Union of Aquarium Curators).

## INTERVIEWING

### THE CEO OF THE OCEANÁRIO DE LISBOA

#### THE OCEANÁRIO IS TODAY LISBON'S TOP TOURIST ATTRACTION. WHAT'S THE SECRET OF ITS SUCCESS?

What our visitors tell us, in their TripAdvisor reviews, is that this is a new aquarium. Considering we've been going for 20 years, that's amazing. The concept behind it is virtually timeless. Our theme, the Global Ocean, was valid twenty years ago and still is today, just as it will be in fifty years' time. In addition to the quality we offer, our success comes from ensuring that the experience is unique and extremely rewarding. The fact that living creatures are our main attraction also adds to the appeal: animals are able to connect us to an emotional experience much more easily than an inert object. In addition, under the new management model in place since we joined the private sector in 2015, all the money that the Oceanário earns, all its profits, are channelled into Ocean conservation and blue literacy. This means that visitors can be sure that as well as enjoying a fantastic experience, they're helping to pay for Ocean conservation work and to boost marine education programmes in Portugal, and that's an added source of satisfaction.

#### ON THE SUBJECT OF BLUE LITERACY, WHAT SPECIFICALLY RAISES PEOPLE'S AWARENESS AND PERSUADES THEM TO CHANGE THEIR BEHAVIOUR?

Firstly, if visitors are inspired by what they see, whenever they read one of the explanatory panels, they are told what they can do tomorrow to help protect the world's oceans. Because the main problem facing the oceans is not in the oceans, it's in cities: it's what I consume, the plastics I use, how I choose to travel. It's us, people. Then we have an educational programme. In 2015, this reached out to around 70 thousand people, but since our new shareholder took over, this has grown, and last year we reached 168 thousand. And about half of this is through programmes which are now free of charge. We have a programme called "Marine Plasticology", in which we visit schools to raise awareness amongst younger generations of the harm that plastic does to marine biodiversity. Strange as it sounds, sometimes we get this message across better when we go into schools, than when the schools come to us. Two weeks later, we go back to that school, go through the canteen, and they've stopped using disposable plastic cups. And now, with the Oceano Azul Foundation, we're working on a new approach, because it's not enough just to inspire people and believe they're going to change something. We're working on a pilot program in Mafra, in conjunction with the Ministry of Education, in which we're going to train primary school teachers to address certain topics on the curriculum from the perspective of the oceans. In short, there's lots to be done and different ways of getting there, and twenty years on, rather than celebrating a new attraction, we've recommitted to our original message, making it harder-hitting. If you go to our shop, you'll see how we've branded it "Sea the Future", and that 30% of the products on sale are already sustainable. Our pledge is that, in three years' time, 95% of what we sell will be sustainable.

#### WHAT HAS BEEN THE OCEANÁRIO'S GREATEST ACHIEVEMENT IN THE PAST TWENTY YEARS?

The most difficult thing has perhaps been to stay at the top of our game, twenty years on. To be a world leader, highly profitable and to channel all our money into worthwhile cause - marine conservation - is a greater asset than the institution itself, and it's something that belongs to us all, it's a public service. And after twenty years, to start having an impact on the world around us, and being sustainable on every front.

*With more than 1 million visitors every year, the Oceanário is one of Lisbon's main tourist attractions.*



#### HOW DO YOU DECIDE WHICH SPECIES YOU TRY TO PROTECT?

The priority is to save what still exists, and there are two clear ways of doing that: one is by working with Protected Marine Areas, principally through the Oceano Azul Foundation. And then we take action on individual species, and that's a difficult choice. What we do is choose a topic each year - for example, last year the topic was "Rays and Sharks" - and then empower institutions to work on the selected groups. So with 23 projects applying for funding, that means we have 23 organisations that start to work in the topic area. We use the influence we have to steer universities and other organisations to work in particular areas.

#### DO YOU FEEL THERE'S STILL ROOM TO GROW?

We're reaching the limit on our capacity, considering the quality standards we want. When the Oceanário is crowded, it's obvious we don't get our message across as effectively as on quieter days. We're well aware that we won't stop growing and so if we're going to continue being efficient in our mission, we'll need a bigger area, we know we need to expand.

#### FLUCTUATIONS IN TOURIST NUMBERS APART, WILL THE OCEANÁRIO CONTINUE TO BE A MAJOR ATTRACTION?

Lisbon's tourist appeal is starting to rival with cities like Barcelona and Madrid. Considering that those cities have twice as many tourists than Portugal, we can conclude that there is still a lot of room to grow. Crises happen, but facilities like the Oceanário are highly resilient to crises. What happens here is that, when local people have less money to spend, they travel less, and so our local visitor numbers grow. It's a trade-off that cushions us from a sudden fall-off in numbers. Our sustainability isn't in doubt, but profitability can vary. Before privatisation, we needed to create new attractions to increase the number of visitors. But not now.



# feat *never* LIGHT

*For the audience, dance is bliss - the delight that sends you into oblivion. For the artists, it's a time of lightness, a moment to put down the burdens of life.*





## LUÍSA ROUBAUD



RESEARCHER AT THE INSTITUTE OF ETHNOMUSICOLOGY – STUDY CENTRE IN MUSIC AND DANCE AND PROFESSOR IN DANCE STUDIES AT THE FACULTY OF HUMAN MOVEMENT (UNIVERSITY OF LISBON). SHE HOLDS A PHD IN DANCE, AN MA IN PORTUGUESE CULTURE AND LITERATURE AND IN PSYCHOLOGY. SHE IS A DANCE CRITIC IN THE PORTUGUESE PRESS.

# A TIME OF LIGHTNESS INTERTWINED

bodies swirling in a waltz. The fragmented and sliding gestures of Michael Jackson's choreographies. Dancers who launch themselves onto the stage in astounding gliding flights. The percussive euphoria of the trance of tribal dances. Dancers with impetuous feet which cut through the soil on squares under the happy clinking of triangles and the breath of concertinas. Perspired skin, tiny expressions of joy or emotion on faces, half-shut eyes denoting intense concentration. Whether in the solemnity of theatres, in ballrooms, in clubs, in folklore dances, in the media or in ritual ceremonies, dancing means to synchronise brain and muscle, reason and emotion, the energy between bodies, nerves and tendons under the lull of sounds or music. This history – of a dancing humanity – has been repeated since the dawn of time in every culture known to man: the first records of human dancing date back to cave paintings from forty thousand years ago. And we also know that babies as young as a few months old react spontaneously to rhythmic stimuli. The omnipresence of dance in human behaviour may have an explanation: the proximity of the auditory cortex and the motor cortex induces an instinctive, involuntary response of the body to sound. And since the brain's current anatomo-physiology is identical to that of the Palaeolithic man, what we feel today as we dance is in every aspect similar to what our ancestors experienced. In human evolution, gestures precede words. Cultural development has added complexity, diversity and social meaning to primitive rites. Dancing has become an exercise in belonging and in reinforcing social ties. In any case, the time for dance is always separate in communities' everyday life. It's a time of lightness, the time to mitigate the burdens of life.

## GOD'S ACROBATS

"The Paris Opera Ballet is like an assembly line for top of the range Ferraris", said Brigitte Lefèvre, who directed the prestigious classical dance company between 1995 and 2014, in the beautiful documentary *La Danse* (Frederick Wiseman, 2009). While dance tends to be accessible to ordinary people in its social or popular forms, theatre stages are inhabited by selected bodies. Youth, talent and beauty under iron discipline, endless hours perspiring in dance studios to achieve a chimera: to work on the illusion of transcending the body's limitations, of relieving it from any biological connotation. This is the founding tradition of Western theatre dance since its inception, in the 1600s European courts: to offer the spectator, immersed in the darkness of the great theatre halls, the repetition of a 400-year-old ritual – projecting onto the dancer an idealised version of himself and thus to secure a fleeting whimsy of surpassing and eternity. But the contemporary era has drawn dance and life together. Today, choreographers and performers stage thoughts, physical sensations or personal stories; or they play with the purity of motor lines, shapes and patterns, which offer new interpretations of space, sounds or music. From melancholy to exultation, from lament to celebration, contemporary creators wish to produce testimonies about the world.

And, since the dance instrument – the human body – is necessarily sexed and defined by social prejudice, watching dance will lead us to ponder on the meanders of gender relations, cultural, identity or aesthetical issues. Even if it is on a subliminal level, watching a choreography always leads us on a journey through existential and social experiences, through every day poetry. Whether they are emotional or cognitive, the links established between the performer and the audience are mainly non-verbal. It is a psychophysical link, operating from body to body. Neuroscience helps us to unveil the mystery of this peculiar communicative relationship: in the nervous system, the so-called "mirror neurons" virtually replicate the movements we observe, thus summoning the muscular, sensorial and emotional experience we would have if we were the ones performing those movements. Dancers are experts on space-time, who learn how to optimise such processes: they study their bodies' actions to the millimetre so that the same action of raising an arm might appear to us to take a thousand years or a fraction of a second. Dance subtexts lead us to dive inside ourselves, on a gliding flight over the time and place in which we live. This is why the words of Martha Graham (1894-1991), American modern dance pioneer, still ring true: dancers are "god's acrobats".





# DANCING IN THE SPOTLIGHT

**A NEW WAVE OF BALLET DANCERS  
IS RAISING THE BAR IN PORTUGAL,  
POLAND AND COLOMBIA.**

© alvarez / Getty Images

## A COLOMBIAN AT THE ROYAL BALLET

### FERNANDO

Montaño was the first Colombian ever to perform in a leading role at the British largest ballet company.

Like many young boys, he initially dreamed of being a football player, but as he saw some ballet for the first time on TV, he started copying the movements and felt something bigger, though he had no idea what ballet was.

Born in Buenaventura in 1985, Montaño, the youngest of four children, was six when he and his family moved from Colombia's Pacific coast to Cali, the country's third-largest city and home for its only proper ballet school. By the age of 12, Fernando Montaño left football behind for good and began taking ballet lessons. It was a late start for a ballet dancer but his perseverance made him play for time and win a scholarship to the famed Cuban National Ballet School, in Havana. At first, he was placed with a family who welcomed him. His parents sacrificed their savings to help him support their dream and afford their children's stay in Cuba.

When Fernando Montaño graduated, he was hired by the Cuban National Ballet (Company?). Then, an offer from Europe came: the aspiring Italian Cuban dancer Venus Villa asked the Colombian to join her in the prestigious Rieti Ballet Competition. Sadly, the visa to travel to Italy came through only three months later, and the festival was long over. In a twist of fate, that same year the dancer was offered contracts with La Scala, of Milan, and the Teatro Nuovo di Torino. The turning point arose in 2006, when he was spotted in Italy by the then-director of the English National Ballet ((Company?)), Jane Hackett, who asked him to audition in the UK. At 19, he joined the company as an Artist, having been promoted to First Artist in 2010 and Soloist in 2014. His repertoire includes a wide array of works, ranging from the role of the Jester in Frederick Ashton's "Cinderella", to the role of the Caterpillar in Christopher Wheeldon's "Alice's Adventures in Wonderland".

*Aged 19, he joined  
the company as an Artist,  
having been promoted  
to First Artist in 2010  
and Soloist in 2014.*



© Dave M. Benett / Getty Images

Following a decade with the Royal Ballet, he took a sabbatical in Bogotá to be a judge on 52 episodes of the first ever Colombian series of Dancing with the Stars. Also in 2016, Montaño was asked to create a choreography for FIFA Futsal World Cup's opening ceremony, which took place in Cali's Coliseo el Pueblo, in Colombia. He used the occasion to debut 'Foot-Ba', his new mix of dance that fuses the elegance of ballet with the energy of football, based on the moves and personalities of some of the world's most iconic players, such as Cristiano Ronaldo, and his personal favourite: Colombian winger James Rodríguez. Fernando Montaño's passionate leap from poverty to stardom has the hallmarks of a Hollywood blockbuster. It is not by chance that he was described on a BBC TV documentary as "the Colombian Billy Elliot", after the 2000 drama film which depicts the life of a 11-year-old coal miner's son whose life is forever changed when he stumbles upon a ballet class, during his weekly boxing lesson. In both 2013 and 2014, he was voted Personality of the Year at the prestigious LUKAS Awards, an annual event recognising outstanding Latin personalities. Outside ballet (and, of course, football), the dancer's interests include supporting the Children of the Andes charity, which aids children in poverty in Colombia.





Marcelino Sambé with Sarah Lamb in the Royal Ballet's production of David Dawson's "The Human Seasons" at the Royal Opera House on 14 March, 2017.

## BORN TO LIVE HIS DAY

### MARCELINO

Sambé became a First Soloist at The Royal Ballet at the age of 23. Born on April 29, the International Dance Day, he has been dancing since he can remember: Marcelino Sambé started with African dances, by taking classes in the Communitarian Centre of his neighbourhood, Alto da Loba (in the municipality of Oeiras, near Lisbon). Amazed by his talent, the Centre's psychologist encouraged him to pursue a career in dancing. Sambé joined the National Conservatory of Lisbon when he was only nine years old. His unfailingly bright and airy technique made him shine from the start and earn a scholarship to the Royal Ballet School's Upper School. After graduating into the Company during the 2012/13 Season, he was promoted to First Artist in 2014, Soloist in 2015 and First Soloist in 2017. Marcelino Sambé's ebullient presence in the ballet world, also as an emerging choreographer, leaves no one indifferent and even called "Forbes" magazine's attention to the point that the leading source for reliable business news has recently included him in its 2018 Under 30 list for Arts and Culture, which distinguishes the trendsetters that are changing the face of the world's dance, design, fashion, and more. Sambé likes to quote Albert Einstein on his definition of dance to say that "dancers are God's athletes." For the Portuguese ballet dancer, dance is a feeling and its performative aspect of telling stories is what makes him more passionate about it. His repertoire includes Hans-Peter/Nutcracker (The Nutcracker), Mercutio (Romeo and Juliet), and Florestan (The Sleeping Beauty). Sambé has created roles in Crystal Pite's "Flight Pattern", Kim Brandstrup's "Ceremony of Innocence", Marriott's "Connectome", Hofesh Shechter's "Untouchable" and Wayne McGregor's "Woolf Works". Sambé's awards include a silver medal at the Moscow International Ballet Competition in 2008, first prize at the Youth American Grand Prix in 2009 and a gold medal and special award at the USA International Ballet Competition in 2010.

## THE POLISH "DANCING DIAMOND"

### PAULINA

Bidzińska conquered the hearts of the Polish after winning the 15<sup>th</sup> edition of Eurovision Young Dancers. Born in 1998, Paulina Bidzińska has always loved dance ever since she was a child. Actually, she dreamed of becoming a figure skating before starting her ballet education, at the age of nine. In 2012, Paulina received the Honourable Mention Award at the National Ballet Competition in Łódź. This was her first important achievement. The years following proved to be successful for Paulina: in 2016, she won an honourable mention at the 9<sup>th</sup> International Choreographic Competition for Ballet School Students in Bytom, and the National Wojciech Wiesiołowski Dance Competition in Gdańsk, in 2017. Winning the 15<sup>th</sup> edition of Eurovision Young Dancers, which was held in Prague last year, brought her global recognition. In the nail-biting finals, the representative of Poland bet the stunning dance performances of other seven competitors. Choreographed by Jacek Przybyłowicz, Paulina Bidzińska danced to Antonio Vivaldi's *Fac ut ardeat*. She and Patricija Crnkovič from Slovenia progressed to the final duel, in which each dancer had 45 seconds to impress the jury with the quality of their dance and artistic expression and versatility. Paulina's set, *La Certa*, totally captivated it. Jon Ola Sand, the EBU's Head of Live Events and Executive Supervisor of Eurovision Young Dancer, congratulated the Polish dancer and said Paulina had performed superbly and her victory in the contest was "thoroughly deserved." Paulina Bidzińska, who had been dubbed a "dancing diamond" before the competition even began, is now a 19-year-old graduate of the Ludomir Różycki Ballet School, in Bytom.



Winning the 15<sup>th</sup> edition of Eurovision Young Dancers, which was held in Prague, brought her global recognition.

Paulina Bidzińska brought Poland its second consecutive victory in the contest.



# THE UNIQUE LIGHT OF LISBON

*Light is the artist's essential tool but, when it comes to Lisbon, the light itself becomes the masterpiece. There's something magical about it that has always enchanted poets, painters, photographers, filmmakers that, to date, remains a secret. A mystery kept within the city's seven hills.*





# THE MAGIC OF THE LIGHT OF LISBON



© joyfall / shutterstock.com

The warm colours – yellow, ochre and pink – and the materials – limestone, Portuguese tiles and roof tiles – used in the houses reflect and scatter the light, making it more intense.

## ANA MARIA EIRÓ



PHD IN NUCLEAR PHYSICS IN 1980, ANA MARIA EIRÓ HAS BEEN INVOLVED IN TEACHING AND RESEARCH SINCE 1970. ANA IS A MEMBER OF THE PHYSICS DEPARTMENT OF THE FACULTY OF SCIENCES OF THE UNIVERSITY OF LISBON, WITH A PERMANENT POSITION SINCE 1985.

## WIDELY

considered as the immaterial icon of the city, the light of Lisbon has been celebrated by poets and writers, painters and other artists, as well as captured by the most renowned photographers and filmmakers. But what makes this light so special? The beauty of the light of Lisbon arises from a multiplicity of phenomena that converge to create a unique ambience: from the number of hours of sunshine to the clearness of the days due to dominant winds; from the construction materials to the very geography of the city, opening up at south to the Tagus river that reflects light all day long. Light comes from the sun, our star and source of natural light. It is a form of energy that propagates as electromagnetic radiation, like microwaves, infrared, ultraviolet or X-rays. Due to the nature of our eyes sensors – the rods and the cones – we only detect a very tiny part of that spectrum – the visible light – characterized by a wave-length  $\lambda$  or by a frequency  $\nu$  that is proportional to the energy of the light beam. We can only see wave-lengths between 390nm ( $3,9 \times 10^{-7}m$ ), which is violet, and 750nm ( $7,5 \times 10^{-7}m$ ), which is red. Although it is perceived as white, visible light is composed by many colours, as we can observe in many atmospheric phenomena like the rainbow. The several colours of the sunlight interact differently with the air, water and dust molecules of the atmosphere. Light with a shorter wavelength, as blue, is more likely to collide with these molecules and therefore blue is the most dispersed colour. Red light, with a longer wavelength, runs through the atmosphere molecules almost without deviating and, thus, red is the most transmitted colour.

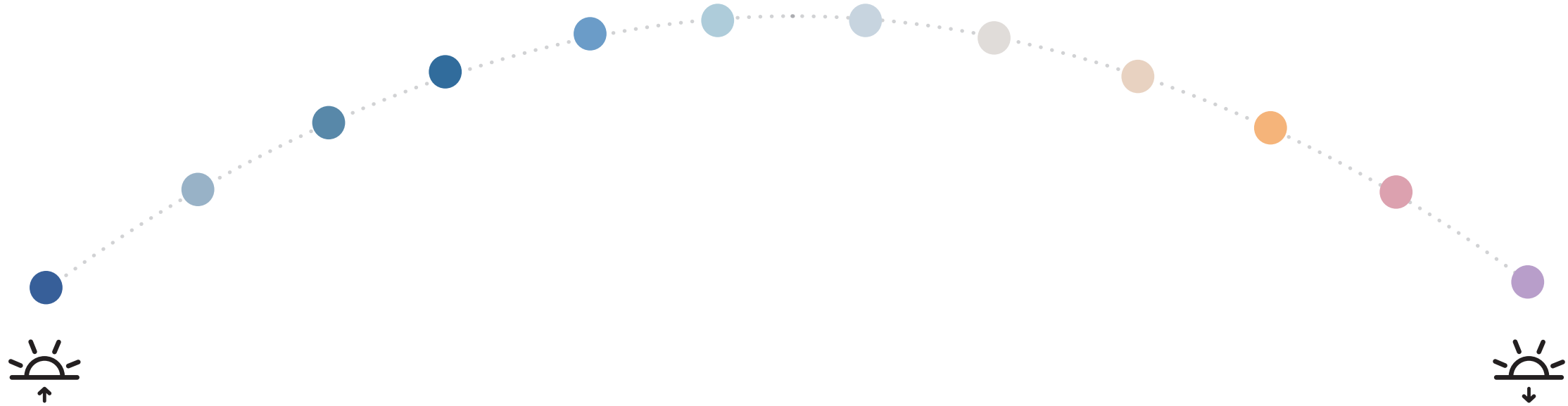
The longer the distance travelled by the light through the atmosphere, the more blue light is deflected and the more red light is transmitted. That is why the sky looks blue and why at dawn and at sunset the light is reddish. Sunrays cross about 800 km in the atmosphere at a grazing incidence, and only about 50 km at a vertical incidence, when it is noon. Lisbon, being in the South Western part of Europe at  $38^\circ N$ , has a considerable number of sunshine hours per year, not only due to its latitude but also because of its cloudiness. On average, Lisbon has about 65% more hours of sunshine per year than Paris ( $48^\circ N$ ) or Berlin ( $52^\circ N$ ), 75% more than London ( $51^\circ N$ ), only 3% more than Madrid ( $40^\circ N$ ) and about the same as Athens ( $38^\circ N$ ). The quality of the radiation can also be quite different, as it is directly related to its geographical position on the Atlantic coast and to the dominant winds. The directions of the prevailing winds at large scale are determined by the main climate regulators in Portugal and the high and low pressures centres situated on the Northern Atlantic – the Azores subtropical anticyclone and the Iceland subpolar low – that vary over the years and throughout the seasons. These main centres of action regulate the winds, that blow in Portugal all year round. In the spring and in the summer the winds are much stronger, blowing predominantly from North and Northeast, as we experience in the Lisbon area. These Northern winds are often associated with polar air masses that clean the air and provide conditions for a very clear atmosphere, giving rise to very bright days with exceptional visibility. Furthermore, from dawn to sunset, that brightness is particularly enhanced by the river, which flows almost east to west, close to the old part of the city. The type of the constructions and pavements is also a very important feature. Lisbon is built with light coloured materials, which reflect and scatter the light, making it more intense. There is abundant white limestone, tiles in facades, and buildings in lioz stone. Beneath the traditional orange roof tiles, the houses are painted in pink, yellow and ochre, the so-called warm colours, sitting on a pavement mainly of Portuguese cobblestone. All these materials and colours, different from other European cities, contribute to the softness of the light. But the city of seven hills, also hides other effects, because these elevations act as a light amphitheatre facing the river, which helps concentrating the solar radiation. In fact, if we represent the topography and the buildings of the city by a simplified model in a shell form, which collects and reflects the light from the sun, we can see that it fits perfectly to the downtown area of the city, allowing us to understand how the surrounding hills contribute to the concentration of light in the valleys. The enchantment of the light of Lisbon is therefore the result of a subtle combination of a wide variety of factors, from the nature of solar radiation and the meteorological effects to the topography of the city and the materials used in its buildings. Hills opening into valleys that flow into the river favour light dispersion and reverberation in the warm coloured houses, and intense reflections in the water mirror at south. For those passing by, or for those who live here, the magic of the light of Lisbon is a reality that bewitches and should definitely be enjoyed.



LISBON

“White city  
sewn  
with stones  
  
Blue city  
sewn  
with the sky  
  
Black city  
like an alleyway  
  
Empty city  
like a warehouse  
  
Lilac city  
sewn  
with jacarandas  
  
Golden city  
sewn  
with churches  
  
Silver city  
sewn  
with the River  
Tagus  
  
(...)”

Adília Lopes,  
excerpt from ‘Poemas Novos’



© Nuno Augusto

THERE ARE  
NO FLOWERS  
FOR ME  
LIKE THE  
VARIEGATED  
COLOURING  
OF LISBON  
ON A SUNNY  
DAY.

Bernardo Soares (Fernando Pessoa),  
in “The Book of Disquiet”

From the lightness of dawn to dusk,  
from sunrise to sunset, Lisbon’s skies  
celebrate a festival of unique colours.



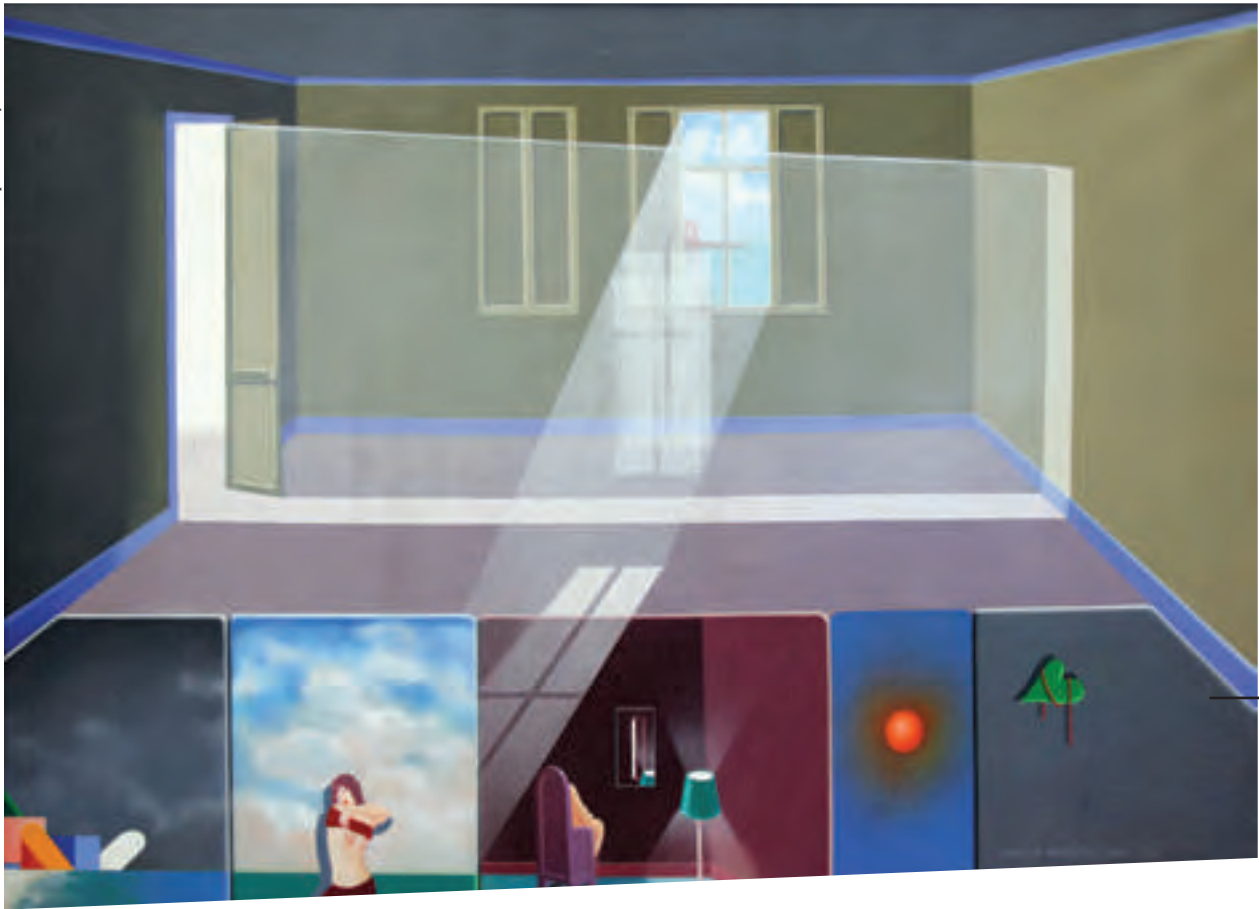
# VISIONS OF AN UNTOLD SECRET

WHY DOES THE LIGHT  
OF LISBON AMAZE ARTISTS  
CONTINUOUSLY?

Are the reasons for its uniqueness more physical or more poetic? What makes it different? Rather than providing definitive answers, the idea behind the first and most comprehensive attempt to depict the singularity of the phenomenon in exhibition format was raising new questions and offering new perspectives on the special clarity of the city.

Created in the scope of the UN/UNESCO International Year of Light's celebration, "The Light of Lisbon" was held between 2015 and 2016 in the multi-branched Museum of Lisbon. In order to capture the mythical luminosity of the Portuguese capital, the event, coordinated by Joana Sousa Monteiro, brought together a significant number of artistic expressions from the twentieth century, crossing various fields, from literature to advertising, from painting to photography and cinema.

The exhibition's layout intended to put science and arts in dialogue, complementing their languages and speeches to take visitors to look at and to feel this unique light. That was why the project was curated by a person from each field: Ana Maria Eiró, full professor of Physics at the Faculty of Science of the University of Lisbon and former director of the Museum of Science of the same university, and Acácio de Almeida, co-founder of the Portuguese Centre of Cinema and Director of Photography in several films that selected Lisbon as a scenery, as Alain Tanner's "The White City".



“Lisbon Revisited”  
by Jorge Martins

This painting from 1974 is a tribute to Fernando Pessoa and presents itself as a symbol of the city at a time of memories and longing. The light is a central theme in his work, as a defining element of the geometry of space.

“Ramalhete de Lisboa”,  
by Carlos Botelho  
(1899-1982)

In this colourful live painting, small and slender anonymous figures punctuate the streets, while the river flows peacefully alongside the blue hills.



“IF I WERE  
GOD, I  
WOULD  
STOP THE  
SUN OVER  
LISBON”

Fernando Assis Pacheco

“Travessa André Valente”,  
by Estrela Faria (1910-1976)

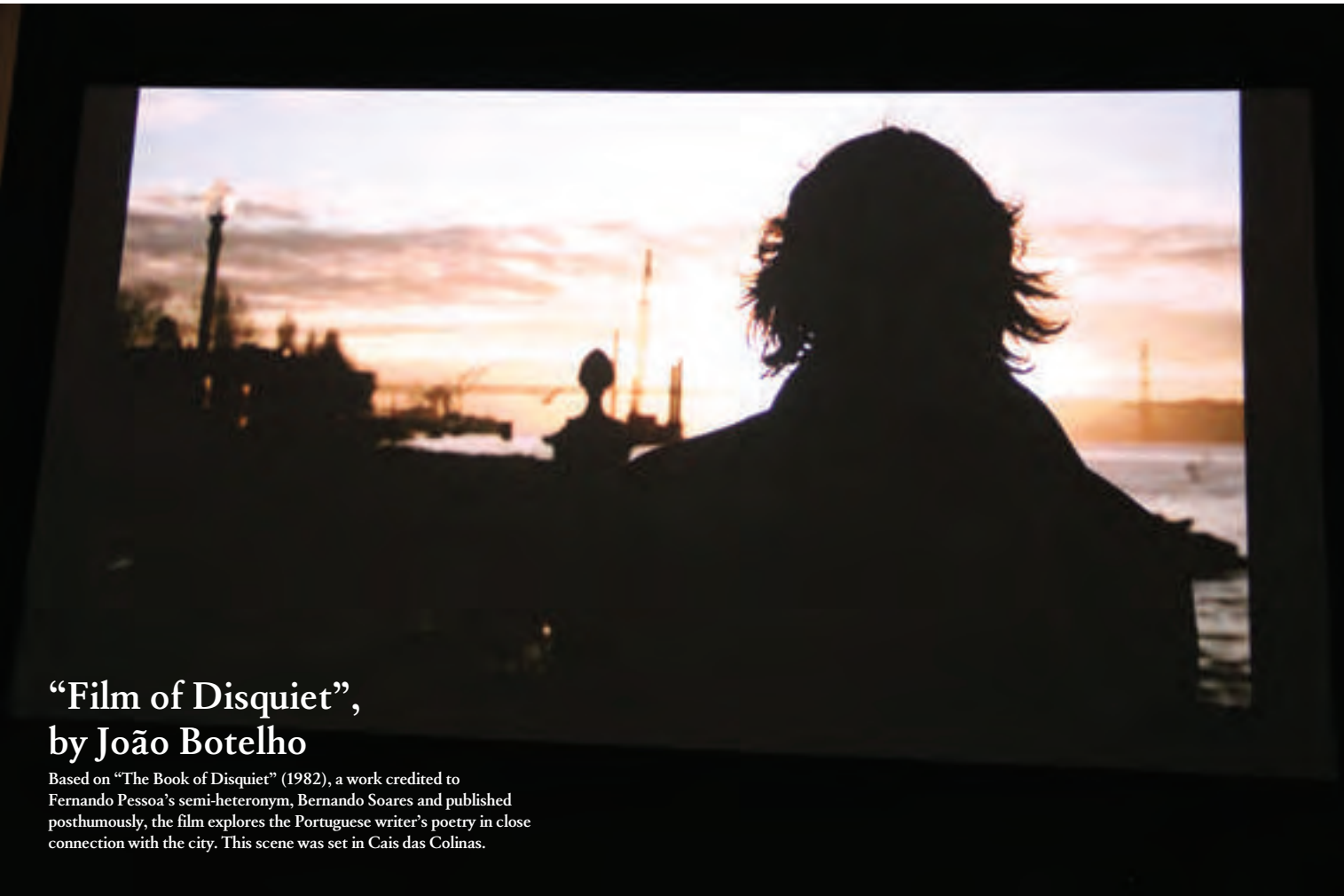
Estrela Faria was a Portuguese modern artist. In this painting, the artist portrays one of the most emblematic and picturesque streets of Lisbon. The Neoclassic poet Bocage lived and died at the number 25 of this alleyway.







**“A Peça”, by Bruno Canas**  
Scene from a short film directed by the young filmmaker Bruno Canas in 2015 about the International Year of Light and its relationship with Lisbon.



**“Film of Disquiet”, by João Botelho**  
Based on “The Book of Disquiet” (1982), a work credited to Fernando Pessoa’s semi-heteronym, Bernardo Soares and published posthumously, the film explores the Portuguese writer’s poetry in close connection with the city. This scene was set in Cais das Colinas.



**“Rua da Rosa”, by Manuel Amado**  
Said to paint Lisbon like no other artist, architect Manuel Amado relies on his memory and impressions to recreate an intimate light above the city. This painting from 1997 reconstructs Rua da Rosa, one of the main streets of Bairro Alto.



Feed.

JERONIMO MARTINS' WORLD'S MAGAZINE

**PASSION** *for* **FOOD**

# TRANSPARENCY

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*There's something special about Vitamin C that makes people reach for it, mostly at the very first symptoms of cold. Zesty, juicy, low-calorie fruits like orange, tomato and lulo are rich sources of ascorbic acid. They're very popular in Portugal, Poland and Colombia.*

---



**ORANGE ON THE OUTSIDE,  
PORTUGUESE ON THE INSIDE**

*Portuguese merchants were the first to introduce the sweet orange in Europe, in the 16th century. That’s why the fruit was named after Portugal in some countries: it is called “portakal” in Turkey, “portokáli” in Greece, and “portocálâ” in Romania.*

*QUEEN C*



This fruit tends to get all the glory when it comes to Vitamin C. In fact, whenever we feel the need to load up on it, the first thing we think of is an orange juice. But oranges are much more than the obvious remedy for Winter chills: apart from the including the powerful multi-tasking antioxidant, they’re packed with flavonoids, minerals, fiber, and a multitude of other vitamins.

**GOLDEN  
SUNSHINE**



**71 mg**

Oranges are one of the most popular fruits worldwide. In Europe, Algarve is the region with the most sun exposure, which accounts for this variety’s certified high-quality. The Algarve Orange is famous for its tender pulp and sweet flavour.



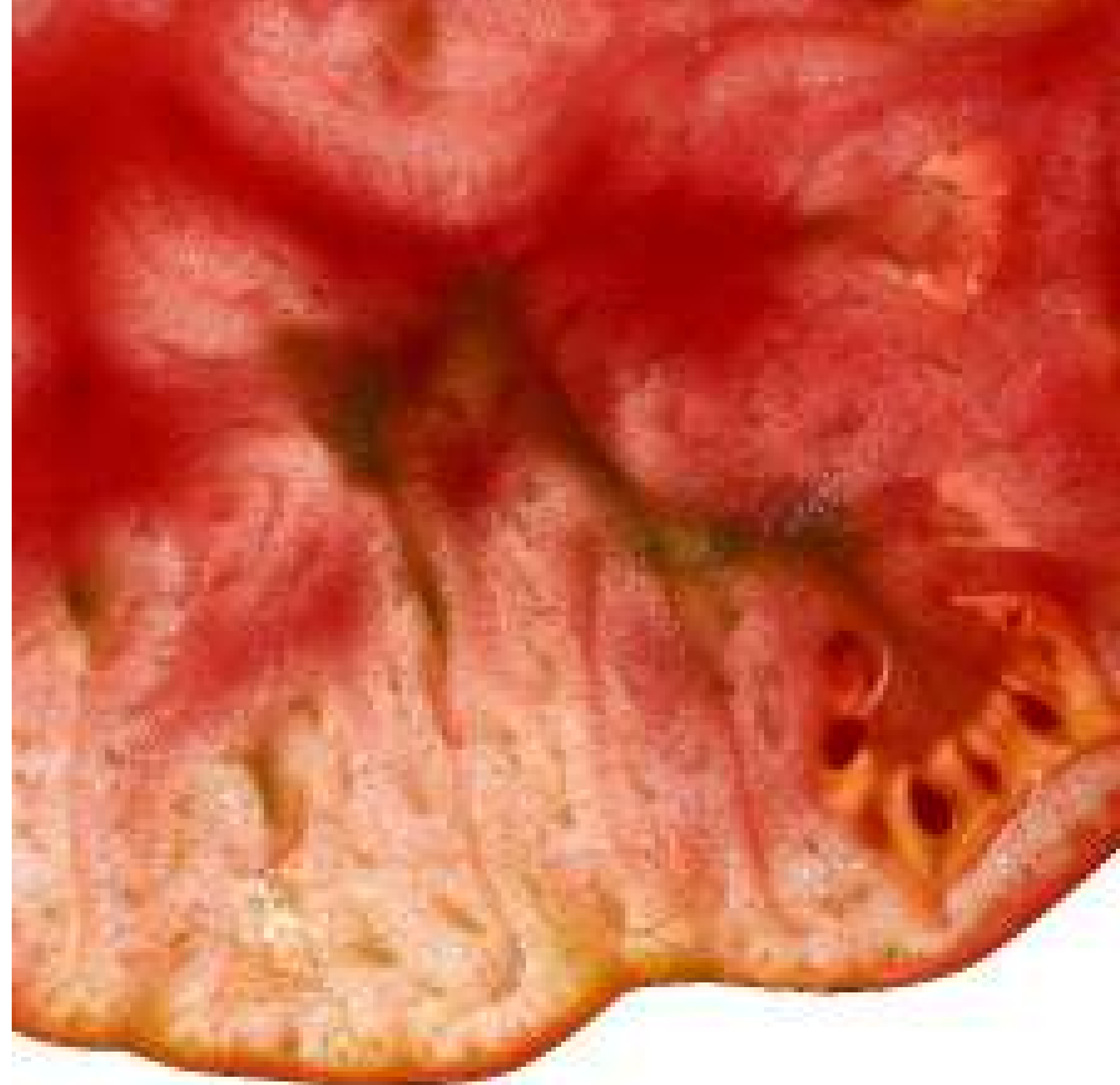


**39,2mg**  
C for yourself

Though we often turn to citrus as our go-to source of Vitamin C, the truth is that there are many other fruits high in ascorbic acid. Tomatoes are the top ten and for those that love sun dried tomatoes news are even better: they contain 39,2 mg per 100 g.

## RED ROMANCE

Tomatoes play a major role on the Polish scene... and cuisine. They are incredibly versatile, being prepared in a seemingly endless number of dishes. Some even like eating it alone, biting into it and feeling its bitter juice drip down their chins. If you're one of those people, please love them with their clothes on: most of this fruit's antioxidant power is in their skin.



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*FROM CLASSIC RED TO PALE WHITE.  
SKIN, SEEDS AND PULP. A TOMATO  
A DAY KEEPS THE HEART DOCTOR AWAY.*

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## HAVE IT YOUR WAY

*The nectar of gods can be eaten raw or cooked but its most popular use is in the form of juice in Lulada, a refreshing drink made with mashed lulos, lime juice, water, sugar and ice. Lulo is also used to make smoothies, jams, jellies, and also in making fruit pies.*



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## ROYAL JELLY FLESH

Lulo, also known as “Naranjilla” (meaning “little orange”) outside Colombia, are totally a thing. This light-green, citrus-like fruit’s texture and colour make it an orange look-alike, inside it is similar to a tomato, and its taste is a mixture of pineapple and lime. Native to the northwest region of South America, it is regarded as a “royal fruit”. As other fruits high in Vitamin C, it protects your heart, boots your immune system strengthen your bones.





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*Light is beginning, light is invention, light is food, light is music. It is everywhere, even when you don't see it. Wanna bet? Here are some of the brightest lights that have illuminated the world throughout the history of mankind.*

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# LIGHT IN HISTORY



## BIBLE: THE BEGINNING



Michelangelo's "Separation of Light From Darkness" (1511) is the first in a series of nine paintings in the centre of the ceiling of the Sistine Chapel, which chronologically depict the beginning of Creation.

"Let there be light" is the first quote attributed to God and it appears in the third phrase of the Bible (Genesis 1:3). After the heavens and earth, God calls on the appearance of light to rebel against the darkness and, like an artist, materialises the concept of light, which is, at the same time, a metaphor for truth and healing.

Archimedes in his bath, 1547. Sixteenth-century hand-coloured woodcut of the Greek mathematician and inventor (c287-212 BC).



© Print Collector / Getty Images

## AND THEN THERE WAS LIGHT!

"Eureka!" exclaimed Archimedes, through the ancient streets of Syracuse after finally having found the answer to a mystery King Hiero of Syracuse had commissioned him to solve. While taking a bath, the mathematician and physicist discovered that when a body is immersed in a fluid, an upward force is exerted by the fluid that opposes the weight of the fluid displaced by the body. That's how Archimedes discovered that the craftsman whom the King had commissioned to make his crown had replaced part of the gold he should have used with silver. This light-bulb moment went down in history as the birth of the Archimedes principle, a physical law discovered by the mathematician and geometry expert who lived from circa 287 to 212 BC.

## SOME OF THE BRIGHTEST LIGHTS IN HISTORY



The story of Aladdin still makes people dream of a genie appearing from a magical oil lamp to grant them three wishes.

© STUDIOGRANDQUEST / Getty Images

Inventor and physicist Thomas Alva Edison (1847-1931) looking at a lightbulb.



© George Eastman House / Getty Images

## A GENIUS LAMP!

The genie of the lamp is one of the most fascinating characters in childhood stories. The fictional character was created in the popular tale of Aladdin from the One Thousand and One Nights (The Arabian Nights) collection, which tells the story of a poor boy who a fake magician tries to deceive, convincing him to retrieve a golden lamp from inside a cave filled with a treasure. When the impostor tries to cheat him, Aladdin catches on to his scheme and seals him inside the cave. That's when he sees the inscription on the lamp and rubs it so that he can read it. All of a sudden, the lamp's genie appears, ready to grant his new master's three wishes.

The War of the Currents pitted American Thomas Edison against Serb Nikola Tesla during the last decades of the 19<sup>th</sup> century. At the heart of the dispute between the two brilliant minds was the electric power supply for homes and businesses in the United States, at the time in the early stages of development for mass distribution. Edison argued that the direct current, with two polarity options and running continually in a single direction - over which he held a patent - was the best system for distributing electricity. Tesla, on the other hand, believed that the alternating current, with a phase and the current reversing direction at regular intervals, would be the best option. Not even the most underhanded methods nor the investments already made in New York city in direct current could prevent Tesla's alternating current from winning and becoming the international standard. The decision was based on the benefits of transmitting electric power using alternating current in relation to the risk of electrocution.

## A BATTLE OF LIGHT BETWEEN INVENTORS

## WHERE LIGHT BEVERAGES COME FROM

The first drink to be dubbed "light" (diet) was rolled out on August 9, 1982 by the Coca-Cola Company. With no sugar or calories, Diet Coke or Coca-Cola Light was introduced on the market eight years before the regulation on the nutritional description and the use of health claims on food packaging were approved in the US. Coca-Cola Light is one of the company's most successful beverages and is sold in nearly 150 countries.



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## "LIGHT MY FIRE"

Released in 1967, the Doors' self-titled debut would soon make the band immortal.



"Light My Fire" catapulted The Doors to fame overnight, with their debut album. It topped the Billboard Singles charts for three months in 1966, a year after the American band was formed. The song was written by guitarist Robby Krieger, and inspired by charismatic singer Jim Morrison.

## NEON CITY

© Loomis Dean / Getty Images



View of the illuminated sign of casinos and hotels along Fremont Street, Las Vegas, Nevada, 1955.

## THE LUMIÈRE OF CINEMA

Introduced by the Lumière brothers, Louis and Auguste, on 28 December 1895, the cinematograph allowed images to be instantly recorded, in frames, thus providing the illusion of movement. The apparatus patented by the Lumière brothers led to the birth of cinema and is considered an improvement on Edison's kinetoscope. In a session open to the public in Paris, the first 20 minutes of moving picture showed "Workers Leaving the Lumière Factory" and the Arrival of a Train at the Ciotat Station".



© Photo12 / Getty Images

## GLOWING EIFFEL TOWER

The city of light's most emblematic landmark was built temporarily as a gateway to the Paris Exposition Universelle of 1889, but ended up a permanent fixture in the French capital. A year later, 3,200 incandescent light bulbs were installed on the Eiffel Tower when Paris hosted the World Fair of 1900, which showcased the scientific and industrial achievements of the previous century, and welcomed 50.8 million visitors between April 15 and November 12 that year.



© Library of Congress / Getty Images



# "LED" IT BE AT JERÓNIMO MARTINS



*The Group  
invested over 65  
million euros  
in efficient  
technologies in  
the last 4 years.*

## ENERGY

efficiency is one of the Jerónimo Martins Group's goals. It invests in the most sophisticated lighting technologies for its stores and logistics centres, such as LED lamps and light bulbs, skylights and photocells.

To provide the light needed every day in the more than 500 stores and Distributions Centres run under the Pingo Doce, Recheio, Hússel and Jerónimo banners, in Portugal, the Jerónimo Martins Group gets its electricity from 100% renewable sources.

The company has also launched a pilot programme to generate electricity using photovoltaic panels at two of the Group's facilities in the tourist region of the Algarve, which has an average of 300 days of sunlight per year.

In total, 3,876 solar panels were installed on the 17,700 m<sup>2</sup> of the store of the Distribution Centre, in Algoz, and the Recheio Cash-and-Carry store, in Tavira.

This technology will help prevent 198.96 tonnes of CO<sub>2</sub> emissions per year, an equivalent to withdrawing 111 cars from circulation or the energy consumption of 525 households in a year.

Considering that climate change and the extreme weather events and natural disasters that come with it are three of the five major global risks identified by the World Economics Forum in 2018, "we could not just sit idly by, says Pedro Soares do Santos, Chairman of the Jerónimo Martins Group. "We had to take action."

That's why, in these past four years alone, the Group has invested over 65 million euros in environmentally efficient technologies to achieve greater energy savings and also to reduce its water consumption.

### LED LIGHTING IN FIGURES THE GROUP USES:



#### 141 car parks

with LED lighting in Portugal (42), Poland (63) and Colombia (36)



#### 378 stores/warehouses

with LED lighting units



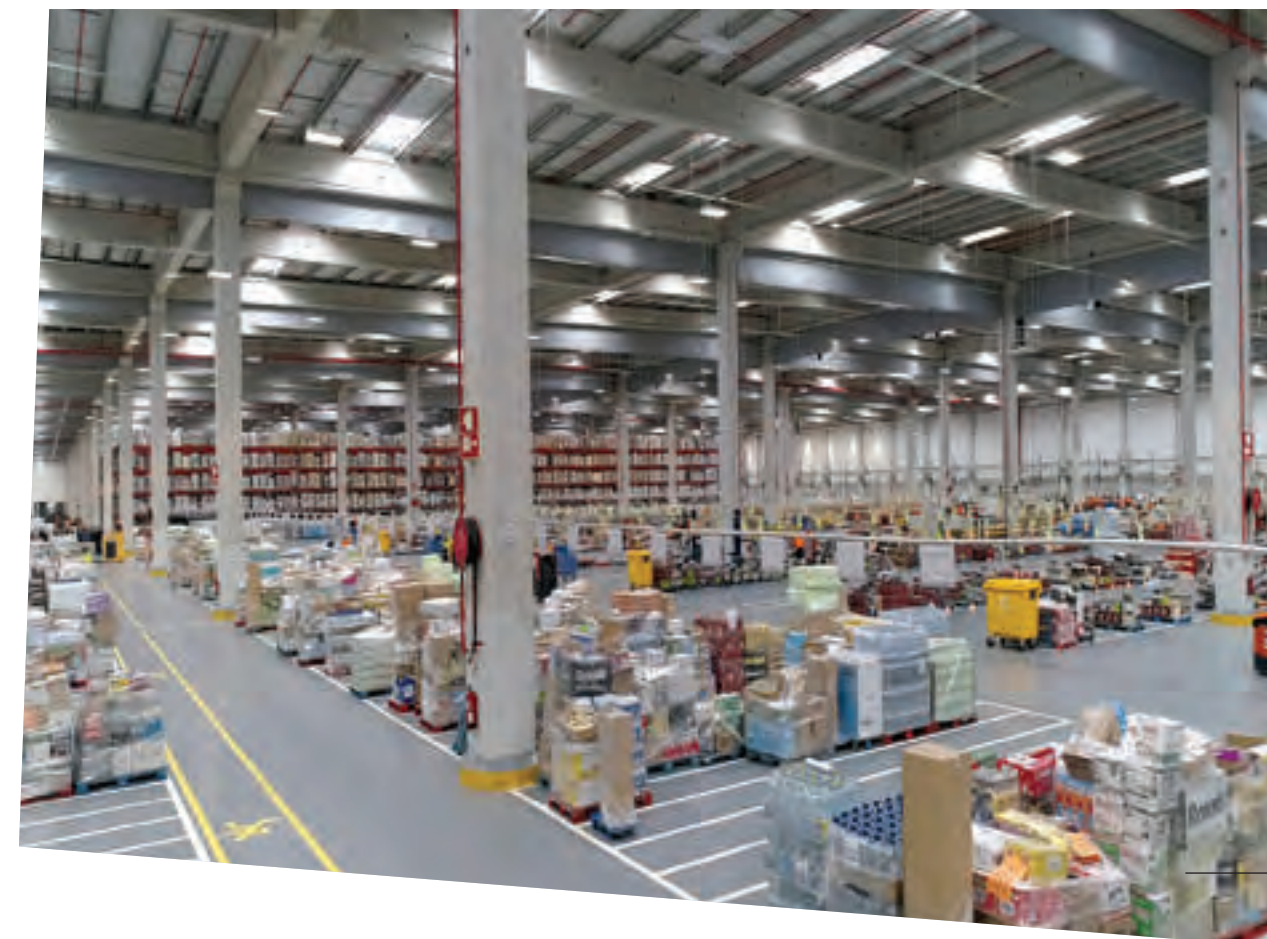
#### 122

refrigerated display cabinets and counters in Portugal (48), Poland (28) and Colombia (36)



## THE MOST LED EFFICIENT CENTRE

The Alfena Distribution Centre, built in 2017, was designed to be the Group's most efficient Centre. It uses LED technology in all its lighting fixtures, enabling light intensity to be controlled and regulated using movement sensors and outdoor lighting, and it has thermal solar panels to heat water.



The Alfena Distribution Centre, in the North of Portugal, was the largest investment of the Group in the country - 75 million euros. Inaugurated in September 2017, it employs 750 people.



# 100 YEARS OF **POLISH INDEPENDENCE**

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*On November 11, 1918, World War I was over and Poland restored its sovereignty as the Second Polish Republic after 123 years under the German, Austrian and Russian Empires.*

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# POLES AND INDEPENDENCE

## JAN OLASZEK



JAN OLASZEK IS AN HISTORIAN WORKING AT THE HISTORICAL RESEARCH OFFICE OF THE INSTITUTE OF NATIONAL REMEMBRANCE (IPN). IN 2016, HE WON THE HISTORY AWARD, FOUNDED BY THE “POLITYKA” WEEKLY, IN THE CATEGORY OF POPULAR SCIENCE BOOK.

**FOR** some nations independence is as natural as breathing. An average Briton or Swede probably rarely thinks about it. But the situation of an Irish, Ukrainian or Polish person is different. Because of the experiences of the Polish people over the last two centuries this topic is a key issue in our culture. Classical works of Polish literature abound with reflections on the meaning of the various forms of struggle for independence. To this day, saying that someone did not want independence is an insult. This in spite of the fact that only a relatively small part of the Polish population was active in the 19<sup>th</sup> century uprisings, the conspiracy movement during World War II and in the activities of the underground opposition during the communist era. A large part of the society sympathised with these movements, but remained passive – a natural attitude after all since it’s always only just few individuals who are ready to make sacrifices. At the same time, however, independence is a value which is strongly present in our value system. The geopolitical location of our country – between two empires, Germany and Russia – was for many years our curse. Therefore the issue of independence, or rather the lack thereof, has for the past two centuries been a constant feature in Polish public debate. In 1918, after 123 years of non-existence, Poland once again became an independent state. After World War I, Polish people had to recreate their “countries”, consisting of lands which for many years belonged to several of their neighbours. Even greater challenges were faced on the international front, because Poland had to fight for its borders with its neighbours. Despite all the problems, the Second Republic of Poland enjoyed some undeniable successes: in the development of science, economy, administration and culture. This does not mean that it was a paradise on Earth. A large part of the population lived in poverty and unemployment was a major problem. It was only possible to speak of Poland as a democratic state for less than eight years following the end of World War I. After that, the country gravitated increasingly towards an authoritarian regime. The situation of national minorities was a serious problem, manifested in the anti-Semitic attitudes of Polish nationalists, which in the 1930s grew stronger.

Later events had a significant impact on how Poland from that time imprinted itself on social memory and what place it occupies in the contemporary Polish remembrance policy. The joy of regaining independence did not last long. The outbreak of World War II, which for Poland started with the German and then Soviet aggression, meant that Polish citizens were yet again unable to make their own decisions. After the German occupation, in which Polish people were subjected to terror by the Germans and at the same time witnessed the Holocaust (the dispute over the attitudes of Poles towards the issue of the extermination of Jews is still ongoing), Poland found itself under Soviet influence for several decades. There was a Polish state after World War II (until 1989), but it was sovereign only formally – in fact the most important decisions concerning Poland were made by the Kremlin. For the Polish people, the fall of communism meant that they once again regained independence. Our independence continues, to this day, strengthened by Poland’s membership in both NATO and the European Union. This year, Poland celebrates the 100<sup>th</sup> anniversary of its reappearance on the map of Europe. 11 November is the most symbolic date of this re-emergence, when Polish Independence Day is celebrated. This date is associated with the most emblematic figure in this part of our history – Józef Piłsudski, to whom power was transferred on that day. His figure is, to this day, associated mainly with the creation of a socialist conspiracy movement during the Partition period, his participation in World War I and, later, his victory over the Bolsheviks in 1920. What is less vividly remembered is the dictatorial nature of his government after 1926. Another important figure in the Polish fight for independence is Roman Dmowski, the founder and patron of the Polish national movement, whose diplomatic activity after World War I was of major importance. However, despite his unquestionable merits, the anti-Semitic views he expressed cast a deep shadow over his character. One can still point to a number of other figures, a pantheon as it were, who also fought for independence in the following decades. As a collective hero one should certainly include the Home Army (Armia Krajowa) and the Polish Underground State operating during World War II (a real phenomenon when compared with resistance movements in other countries occupied by the Germans at that time), as well as Polish soldiers fighting alongside the Allies on various WWII fronts. The fact that Poland regained its independence in 1989 is also connected to the Solidarity movement (“Solidarność”). Its leader, world-famous Lech Wałęsa, remains its symbol despite the recently revealed fact that he cooperated with the communist political police for several years in the seventies. John Paul II, the Solidarity movement supporter, is often mentioned alongside the leader. Liberation movements in other countries of the Soviet bloc drew on the experience of Polish democratic opposition, but none of them reached the scale this movement had in Poland. Independence is also associated by the Polish people with symbolic places: the Tomb of the Unknown Soldier in Warsaw (the symbolic monument to the victims of Polish battles at various points in history), as well as the Belvedere Palace (Piłsudski’s residence as Chief of State) and the cemetery where the participants of the Warsaw Uprising are buried, both also located in the capital. Another symbol of independence is Gdańsk – the city which was the target of the attack marking the outbreak of World War II in 1939 and where the Solidarity movement was established – the independent workers’ trade union which paved the way for regaining independence.



Frontpage of French newspaper “Le petit Journal”, February 22, 1920. It depicts a map of independent Poland, with a portrait of Józef Klemens Piłsudski (1867-1935), and the White Eagle, Coat of arms of Poland.





Statue of Józef Piłsudski in Sulejów, a small municipality Southeast of Warsaw, Poland.

# THE BIRTH OF A NATION

## DURING

the patriotic demonstrations held in Częstochowa on 3 May 1916 to mark the 125<sup>th</sup> anniversary of the adoption of the 3<sup>rd</sup> of May Constitution – the words “Long live Poland! Long live the Catholic Church! Long live freedom and the Polish army!” were uttered. These words can be considered the motto of the activities undertaken by the Polish people during the Partition period and then in their fight to regain independence, lost in 1795. Demonstrations of this kind took place in various cities across the former Republic of Poland in 1916 and then later, on various patriotic occasions. Above all, people celebrated the anniversaries of the outbreak of the three national uprisings, which took place in 1794 (the Kościuszko Uprising), in 1830 (the November Uprising) and in 1863 (the January Uprising), and the leaders of these uprisings, including Tadeusz Kościuszko, on the 100<sup>th</sup> anniversary of his death in 1917. It was a way for people to emphasize their attachment to national tradition, to freedom and to the idea of Polishness. They made it clear that, despite the fact that the Polish state had not existed on the map of Europe for over 120 years, Polish people were still “dreaming of freedom”. And not even the lost bids for independence could dissuade them from this dream, even though the occupiers introduced various repressive measures following the fall of these uprisings – captured participants were imprisoned, sentenced to many years of exile (mainly to Siberia), had their property confiscated or were subjected to restrictions of their political freedoms, the ability to engage in social and economic activity and their freedom of worship restricted. However, contrary to the authorities’ expectations, the increasing reprisals led to an ever stronger social resistance. The main objective of this resistance was the defence of Polishness, understood as the defence of the Polish language, faith, history and tradition, as well as Polish property.

*In the interwar period, as well as during and after World War II, the memory of national uprisings to maintain national identity did not fade.*

These aims were achieved using various means, depending on which regime the given region was under and the methods used by the partitioning authorities. Many houses kept memorabilia related to the uprisings, cultivated the memory of family members who participated and ensured a patriotic upbringing of their children. The main goal was to teach the children the Polish language and introduce them to Polish history and literature.

Mothers played a special role in these activities, as they were responsible for raising children in the spirit of Polishness – they prepared sons for the fight for independence and daughters for giving birth to future soldiers. It was also seen almost as a duty of every Polish person to visit Cracow – the former seat of the Polish kings and after 1867, when national liberties were allowed, a place where national culture developed relatively freely and where national anniversary celebrations were held and a Polish university operated. It was also in Cracow that Józef Piłsudski, a political emigrant from the Kingdom of Poland and member of the Polish Socialist Party, who fought against tsarism, initiated the creation of the Polish Rifle Squads which, after the outbreak of World War I, stood as Polish troops fighting alongside the Austro-Hungarian Army. Over time, they became a symbol of the Polish struggle for independence, and later, after the rebirth of the independent Polish state, the foundation of the Polish army. As for Piłsudski, he began to be perceived as the main creator of this event. Zofia Moraczewska, a social activist and later on one of the first Polish women parliamentarians, wrote in 1916: “[...] – in all the confusion, in all the chaos, in the tragic search for paths – in this endless, powerless dance, we need faith, even if a blind one, in someone’s greatness and strength as solid as a rock so that we can get out of the maze... Piłsudski seems to be that person, so even if we are failed yet again, even by this hope, let there be faith in him for now!”

The shift in the political and military situation (which may be symbolised by the defeats of the Russian army), the outbreak of the Russian Revolution and, finally, the declarations of independence by the German and Austrian emperors on 5 November 1916, as well as the refusal by the Polish troops to take a pledge of allegiance to the emperor and the arrest of Piłsudski, strengthened the feeling that Poland could regain its independence. The last clue was crossed in Fourteen Points by the US President Woodrow Wilson who, thanks to the actions of pianist Ignacy Paderewski, was well aware of the situation in the Polish lands. Polish people in all of the three annexed territories redoubled their efforts to rebuild the future state. There was less and less willingness to cooperate with the governments of the partitioning powers. People wanted to show their determination to fight for a free homeland. Conspiracies, carried out as part of the activities of the Polish Military Organisation among other things, intensified. Moreover, the Polish National Committee, operating since 1917 in Paris, intensified its international activities. Even before the formal end of the military operations of the Great War, skirmishes with the Ukrainians broke out in Lviv and the surrounding area, followed by war with the Bolsheviks. Exhausted by five years of war and occupation, the society took up arms and managed to form an army in a flash. In the area of Poznań and later Silesia (the Prussian Partition) uprisings broke out, aimed at confirming the preferences of the inhabitants of these lands.

The fighting eventually stopped in 1922. At the same time, at the backend of the war fronts as it were, starting as early as 1917, the foundations for the Polish state were laid. These activities intensified after Józef Piłsudski returned from prison in Magdeburg and after the

armistice at the Western front (11 November 1918). Independent Poland became a democratic country – the right to vote was granted not only to men but also to women, the only electoral qualification criterion in force was age, and progressive legislation was introduced – including an eight-hour working day.

The Constitution, adopted in March 1921, recognised inhabitants of the Polish state as Polish citizens regardless of their gender or religion. Turnout in the first elections was very high – undoubtedly the result of the people’s joy at winning back their own country, but also of the hopes they pinned upon it. The experience of losing independence for over a century and fighting to get it back became a permanent part of Polish identity. In the interwar period, as well as during and after World War II, the memory of national uprisings and other manifestations of the struggle to maintain national identity did not fade.

It can even be said that the Nazi occupation was incorporated into this symbolic order of things and in a way strengthened the independence tradition. In 1937, the symbolic day of 11 November (marking the end of the war and Piłsudski’s return) was proclaimed a state holiday. Despite the authorities’ attempts to question its importance after 1945, it returned to the state holiday calendar as the Polish Independence Day following the political transformation in 1989. This year marks the 100<sup>th</sup> anniversary of the reappearance of Poland on the map of Europe.

## KATARZYNA SIERAKOWSKA



AS A PROFESSOR AT THE TADEUSZ MANTEUFFEL INSTITUTE OF HISTORY, POLISH ACADEMY OF SCIENCE WARSAW, SIERAKOWSKA’S RESEARCH INTERESTS INCLUDE THE SOCIAL HISTORY OF POLAND IN THE 19<sup>TH</sup> AND 20<sup>TH</sup> CENTURIES, WITH PARTICULAR FOCUS ON WWI AND INTERWAR PERIOD, THE HISTORY OF WOMEN AND HISTORY OF GENDER.



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*The search for a unique, nature-inspired sound, and the seed of his father's passion for guitar-making, got Óscar Cardoso striving to create the perfect instrument. This alchemic search resulted in a backless guitar, whose music turns out to lie in the hands, body and soul of the beholders.*

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# SOUND OF LIGHTNESS



## ÓSCAR CARDOSO

*“But I like inventing, challenging the norm. I don’t imitate anyone.”*

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© Paulo Sousa Coelho

**HE** learned how to make guitars with his father. He still hasn’t found the perfect sound, but he has built a model with a unique one: by combining materials used in surfboards with an open soundboard, he created the backless Portuguese guitar. The secret? It’s light. If a tiny sparrow can be heard from 100 metres away, we’ll most likely hear it perfectly. Physics and acoustics could explain this phenomenon, but Óscar Cardoso, pioneer in the construction of backless Portuguese guitars, wanted to delve into this phenomenon more deeply. Son of an artisan, he started tinkering in his father’s workshop at an early age, torn between his studies and his passion for wood. He studied in Italy and then returned home to dedicate himself to his two great loves: the ocean and guitars.

*Son of an artisan, he started tinkering in his father’s workshop at an early age, torn between his studies and his passion for wood.*

## THE WEIGHT OF A GUITAR SOUND

**When did you start learning the craft?**

I’ve always had a passion for wood, the smell, and I was always at my father’s side. I loved watching him work. We had our disagreements. I would steal his tools, and he didn’t really encourage me to learn the craft. He wanted me to study. He saw that I had a knack for it, but felt that if I stuck with it, I wouldn’t want to study. That was the problem. I was ten and he would say: “Óscar, see if you can saw that wood. I’m getting to old to do it.” And I would get all excited. I would spend the day sawing away, always heeding the advice my father gave me: “Tilt it this way, try smoothing it.” That’s how I started, with the basics, sawing, smoothing, sharpening the tools. I did it for years.

**But did you study the art of building guitars?**

I got a scholarship to a very well-known school in Carmona, in Italy. My father never told me, so I was very surprised when I realised that the technique and process were identical to what we did at home. I called him and said: “We do things here exactly as you taught me.” Master maker Álvaro da Silveira, the great revolutionary and a driving force behind the Portuguese guitar, was my father’s mentor. Given that he had attended the school, he passed on the method, all the technology and way of working. But I learned a lot, more theory than practice.

**At the time, did you already have different ideas for the guitars?**

I was always a bit of a daydreamer, always out of the house. My mother would tell me to buy sugar and I would forget. We joked around about it. People would tell my father that I had a big imagination, that my head was always in the clouds. Sometimes he would test me, saying: “My mentor would put some strings inside the guitar to hear the sound.” My father also liked to experiment. Not as much as he would have liked though, because he had to make a living. I would hear things like that and my head would spin. I build instruments, but I like inventing, challenging the norm. I don’t imitate anyone. I like to make my own things and create emotions. Making things, inventing and sparking reactions.



© Paulo Sousa Coelho

Portugal’s maritime past is sharply present in this guitar’s head, which somehow resembles a vessel’s bow.



© Paulo Sousa Coelho

## One of a Kind

Guitar making is more of an art than craftsmanship, for each ornament is individually handcrafted, being this sound hole a great example.



*“I search for a sound that identifies with the atoms, with the universe, with space.”*



## Getting in Tune

For the person used to playing a factory model, a guitar from the hand of a skilled luthier like Óscar is always a surprise.

**What emotions do you hope to create with the sound of your guitars?**

Sound lives within me, in my imagination and it's what drives me to look for a bunch of different acoustic processes and ways to create that sound. It's an inner struggle. I never like the instruments I make. I feel disappointed after a few months, if one comes back to the workshop for some reason. I'm even surprised by the sound.

**And what is the sound you are searching for?**

I don't know. It's a sound that identifies with the atoms, with the universe, with space. Do you hear the birds? A tiny bird can make a perfect, clear sound, with no interference. It's in perfect harmony with the space around it. The sound waves propagate, there's no need for an amplifier. That's what I'm looking for, an instrument that projects a pure, defined sound.

**How did you come up with the idea for a backless guitar?**

In instruments that are totally enclosed, the bass completely overpowers the treble. Sound waves cancel each other out. And

the resulting sound isn't very defined. Without even realising it, I found myself thinking about it subconsciously when I decided to make a backless instrument. I spoke with people in acoustics who told me: that won't work, it's all been studied. But I'm stubborn. The first was a guitar for Mário Pacheco, who plays at a Fado club in Alfama.

**And the sound?**

Some fabulous well-defined treble. These instruments use the space as acoustics. I somehow managed to find the sound I was looking for. If you play a backless guitar on a riverbank, you'll hear it on the other side.

**Surfing is another passion of yours. You ended up using surfboard materials for the guitar. Why?**

Because I discovered that surfboard material used with wood has an interesting effect on sound. There's a musician, José Manuel Neto, who accompanies Fado singers Mariza and Camané and has a backless guitar with the sides and back made of styrofoam and fibreglass resin. And he plays it every day.

**How long does it take (to make a guitar)?**

It depends. I don't like working, I like creating. And to create, I have to want to. Sometimes I grab five or six instruments and I work on them for three months. And then I get tired of it. I spend some time just doing repairs. I want to enjoy life. Man does not live by bread alone.

**So, you have time to explore other things.**

It's important not lose our roots, but we need to evolve. I now make hollowed out guitars because their sound has always been heard from afar, it's recognisable. But the raw material was used differently. Because it is difficult to work with, alternatives were sought and the roots were lost. I realised that it's all in the roots, so I went back to fine tune them. The hollowed out guitars I make are my favourite as far as sound goes.

**Where do you get your wood from?**

I used to take great care with the wood, Palo Santo (Bursera Graveolens), Brazilian Rosewood (Dalbergia nigra). Today, I just use any wood to make a guitar. It's all about the thickness and width, how it's applied. The rest is just noise. Stradivarius made perfect violins, but they've only become better with age.



It is in the confusion of his workshop that Óscar finds the harmony he wants for his creations.



Detail of a backless guitar made by Óscar.



# TAKING BACK THE NIGHT

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*In built-up areas, a surfeit of light has blocked out the Milky Way. But as we move out into the country, darkness takes over and the stars shine through. A night spent under the Alentejo skies, in the world's first reserve certified as a Starlight Tourism Destination, is a pledge that stargazing is a lot more than just entertainment.*

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## LET THERE BE DARK

**THE** evening light fades over the waters of the Alqueva reservoir, Southeast of Portugal. Seen from the Campinho picnic park, in the municipal district of Reguengos de Monsaraz, the sun sets in silence broken only by the bleating of sheep. Across the lake, the Earth's shadow projected onto the atmosphere spreads a rosy glow, today less vivid than normal, because there's mist in the air. Amidst competing claims on our attention, our eyes are now drawn to a less usual phenomenon: bulging on the horizon, the sun appears to point a kind of lantern ray up into the sky. We are not the only ones savouring the vastness of the landscape, or the uniqueness of the moment, which begs to be immortalised in a photograph. Standing alongside Apolónia Rodrigues, the founder of Dark Sky Alqueva, Miguel Claro, the distinguished astrophotographer, works on a photograph that does justice to the rare beauty of this sunset.

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A few minutes later, the night has arrived in all its glory and Venus is the first to join the unfolding spectacle. A spectacle which Dark Sky Alqueva's visitors have the good fortune to enjoy, using telescopes or just the naked eye, or even on nocturnal canoe trips on the lake. "Most people who live in cities and then come here have never seen the Milky Way with the naked eye and hardly believe it's possible to see all these stars, they think they don't exist", Apolónia told us. The reserve was created in 2007 to give them back the dark nights which light pollution had banished from the streets, offering the chance to see a real night sky, untainted and dripping in stars, almost all year round. These factors were crucial in getting the reserve certified by UNESCO and the World Tourism Organization (WTO) as a Starlight Tourism Destination. "In the United Kingdom, they're doing very interesting things to tackle light pollution, but they're missing one thing: clear skies. It's our good luck here that more than 50% of the nights are cloud free, and in a 10-year study, we manage to have an average of 286 clear nights a year. And certification means we can say this with confidence. There are markets where this is highly valued, such as the United States," she told us.

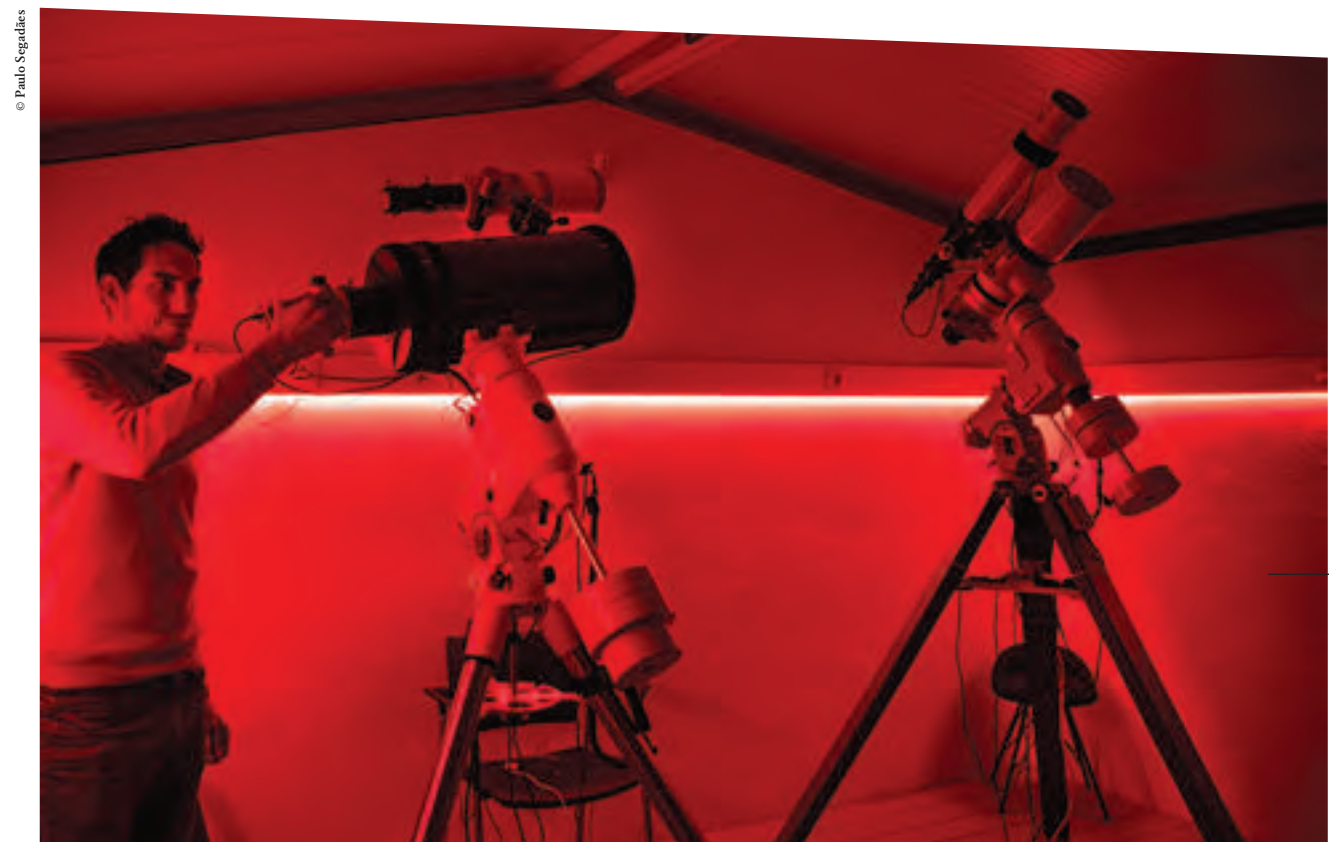
Visitors can enjoy the pure wonder of stargazing, as well as a host of related activities that have sprung up, drawing on the region's potential and adding variety to the experience: yoga sessions with movements inspired by the solar system, nocturnal birdwatching, and blind wine tastings, where the darkness means there's no fussing about with blindfolds. "We have a wine expert, João Passos, who gets people so involved in the tasting that they can't even tell a white from a red," we heard from Apolónia Rodrigues. Apolónia also told us about the Dark Sky Party held by the lake normally in July, when live music sheds new light on all these experiences. in the dark. The idea is "basically, everything that can celebrate the night". Even during the day. The perfect way to see the dawn is from a hot-air balloon, lunch can be at one of the restaurants on the Dark Sky route, and the sunset party at the observatory, with the house gin, Sharish Dark Sky.

The possibilities are varied and cater to a discerning international clientele, across every age group. "When it comes to the Portuguese market, it's amazing to see that we have whole families who come stargazing. Kids, because they hear about it at school and are curious to see for themselves. The grandparents, because they always loved the night sky, but have had to get used to urban life and lost the connection. And the parents, who once dreamed of being astronauts and going into space, so when they hear about Dark Sky, it takes them back. People come to celebrate their birthdays.... you even see old ladies on their ninetieth birthday, with family and friends."

The observatory is five kilometres away from the picnic park, in Cumeada. In the old primary school building, the Dark Sky Alqueva logo tells us we've reached the reserve's headquarters. Miguel Claro is clearly proud to tell us that the art director responsible for designing their corporate identity was Gonçalo Jordão, winner of the 2015 Oscar for Best Art Direction for his work on *The Grand Budapest Hotel*.

*"I wanted to share what I thought was fantastic, be it the alignment of a planet above a castle, or the night sky over a megalithic monument."*

Miguel Claro



The Dark Sky Observatory is equipped with cutting-edge telescopes for solar and astronomical observations.



*The reserve's visitors are offered the chance to see a real night sky, untainted and dripping in stars, almost all year round.*



© Miguel Claro

Miguel Claro has specialized in skyscape photography, exploring the connection between the Night Sky and the cultural and architectural heritage of the places he visits.



© Miguel Claro

Stars. More stars lighting the way. Inside, we look around an exhibition of the astrophotographer's work and learn that his connection with Dark Sky Alqueva dates back to 2012, when he was just about to launch his first book, Astrophotography: Starlit Images. Torn between his passion for astronomy and his love of photography, he found a way of working with both: "When I was twelve, I would spend my pocket money on astronomy magazines, like Astronomy or Sky Telescope, that I bought from a tiny kiosk not far from our house. So as soon as I got my first telescope, what I immediately did was to fit it with a camera, one of those video surveillance cameras we had back then. I thought it was amazing and I wanted to share what I thought was fantastic." Today he shares his knowledge and skills in astrophotography workshops at the reserve. He has specialised in landscapes, firstly because he soon realised that photographing the sky needed very expensive equipment and then because he loved the idea of creating images that told a story, that might be "the alignment of a planet above a castle, or the night sky over a megalithic monument."

## NEW GALAXIES

In its mission to defend the night sky, Dark Sky Alqueva has expanded across the border into Spain. With the certification of six Spanish municipal districts, the reserve is now the world's first cross-border Starlight Tourism Destination, covering 7,000 km<sup>2</sup> in Portugal and 3,000 in Spain. Elsewhere in Portugal, the project is expanding with Dark Sky Xisto, designed to replicate its success in the 27 Schist Villages - Aldeias do Xisto - in central Portugal, adapting the idea to a different region. Other plans include the Sky and Mystic Places Park and the Wine Way on the Milky Way, with visits to wineries and daytime tastings.

## ROSETTE NEBULA

### A HOLE IN THE HEART OF A ROSE

The Rosette Nebula is a large complex of bright emission and dark nebulae, located in the Monoceros region of the Milky Way Galaxy. 2500 young stars lie in this star-forming complex, whose radiation excites the atoms in the nebula, causing them to produce the reddish color of a hydrogen-alpha emission. Stellar winds have cleared out the cavity in the center, creating the illusion of its rose-like shape.





© Miguel Claro

## ORION NEBULA

PURPLE BLUE  
SMOKEY BUBBLE

The Orion Nebula (M42) is a diffuse and large nebula complex situated in the constellation of Orion. It glows in vivid shades of pink and purple blue. At its heart, and illuminating the surrounding region, there is a group of stars known as the Trapezium. Separated from it by only a dark lane of dust, we can see a miniature Orion Nebula, M43.

## IN NASA'S ORBIT

His devotion to a blend of art and science that uses light to portray another form of light has won Miguel Claro a place in the astrophotography firmament: one of his photos was chosen as “Astronomy Picture of the Day” in the NASA catalogue. On an expedition to Pico, in the Azores, with a group and an Iranian friend and photographer in 2005, Miguel captured a phenomenon that the US space agency was currently investigating: airglow, the photochemical luminescence of the atmosphere. “We set out at midnight, in the rain, with backpacks weighing 15 kilos, and two tripods. 2,400 metres, but you could hardly see anything. Then the skies cleared, at around 1,200 metres. I pointed my camera to where you could see Faial in the distance, and I’d just started to shoot when I noticed there were some strips of light,” Miguel told us. The real surprise came when he developed the film: “a rainbow in three colours,” displayed in three bands, resulting from the combination of luminescence in shades of green, yellow and red with the undulation caused by a slight disturbance in the atmosphere. “I was later contacted by a group of scientists who were studying airglow and had satellite images of the same phenomenon.”

## NOMINATED FOR THE WORLD TRAVEL AWARDS

In March this year, Dark Sky Alqueva was nominated for the World Travel Awards, in the category for Europe’s Leading Destination. For Apolónia Rodrigues, the nomination is itself a huge achievement, considering the iconic European landmarks competing for the same title: the Eiffel Tower, in Paris, the Acropolis, in Athens, the Colosseum, in Rome, Buckingham Palace, in London, and Barcelona’s Sagrada Família. The project has already picked up two tourism awards: in 2013 it was first runner up for the World Trade Organisation’s Ulysses prize, in the Innovation category, and in 2016 it took the European Commission’s ETIS award for social and cultural impact.



© Miguel Claro

Captured during a climb up Mount Pico in the Azores of Portugal, the feature image shows the sky glowing like a giant repeating rainbow.



© Paulo Segal Dias

Apolónia Rodrigues says the nomination for the World Travel Awards is itself a huge achievement.

“Most people who live in cities and then come here have never seen the Milky Way with the naked eye and hardly believe it’s possible to see all these stars.”

Apolónia Rodrigues



# BOOKshelf

BOOKS FROM AROUND THE WORLD

*The following list is comprised of books that relate to the various topics explored throughout this issue. It provides an entry point for readers that may want to further examine these themes through handpicked selections that promise to enrich worldviews.*

1.

## GRAPHIC CITY

### 20<sup>th</sup> century Lisbon Signboards and Lighted Signs

**GLASS** signs with painted letterings, light boxes, metallic letters, screened sliding doors and, of course, neon signs. The memory of the graphic landscape of a city in blinking lights is kept alive through the pages of this book.

The book was published in the scope of MUDE - Design and Fashion Museum's programming "Fora de Portas" ("Outdoors"), an invitation to look at as a Graphic City in the homonymous temporary exhibition held at the Convento da Trindade in 2016. The event had been planned and set up within the scope of the project "Letreiro Galeria" (meaning "Gallery Sign"), authored by graphic designers Rita Múrias and Paulo Barata.

They have been photographing and collecting the deactivated signs and rediscovering their underlying stories, reconstructed piece by piece thanks to several testimonies.

The cover shows the emblematic Ritz hotel's original sign. Each letter is 2.5-metre tall and weighs 80 kg, making it a major attraction in the exhibition.

More than a mere catalogue of the deactivated signs, the book gives this visual legacy a full recognition as cultural heritage and pays homage to an important part of the city's History that deserved to be studied and preserved.



#### Graphic City 20<sup>th</sup> Century Lisbon Signboards and Lighted Signs

The book recreates a tour along downtown Lisbon during the shiny neon era.



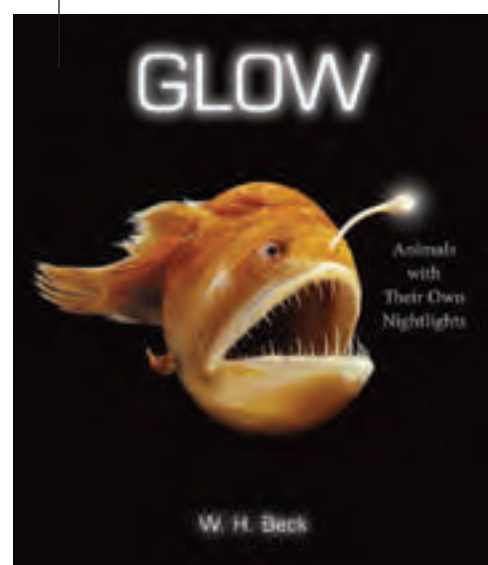
# BOOKshelf

BOOKS FROM AROUND THE WORLD

3.

## GLOW: Animals with Their Own Night-Lights

A dazzling look at animals who create their own light using bioluminescence.



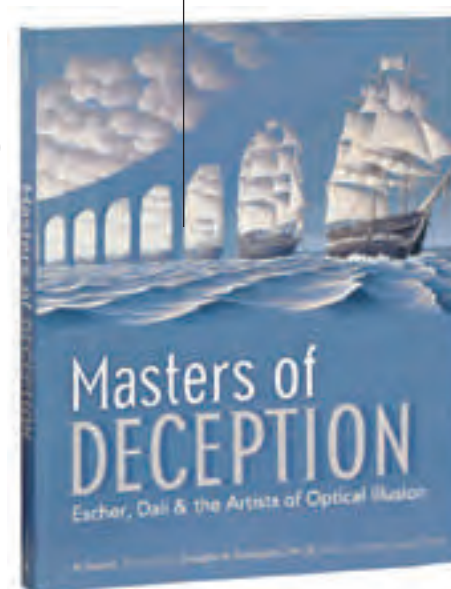
**Stunning** colour photographs set against glossy black pages walk us through the glowing world of bioluminescence, on land and underwater.

“Why be afraid of the dark when there is so much to see?” The question joins world-renowned photographers and biologists on close encounters with curious creatures that produce their own light in this fascinating and fun picture book. W. H. Beck, also the author of children’s books, writes it in a way that young people can understand and adults can enjoy, making it perfect for a wide age range of readers. She pairs quiet reflections with more detailed explanations, examining creatures that have this rare quality, habitats, actual size, and binomial nomenclature and the whys of their glow.

The “Wall Street Journal” writes: “Mysterious and sculptural, the creatures in this arresting book are, in the oldest and best sense of the phrase, totally awesome.” “Glow: Animals with Their Own Night-Lights” is a stellar nonfiction book that will definitely enlighten everyone with its hauntingly beautiful powerful images as much as the content itself.

2.

Works of genius that provide endless enjoyment and outwit the brain of every lover of optical illusions.



## MASTERS OF DECEPTION Escher, Dali and the Artists of Optical Illusion

**M. C. Escher** and Salvador Dali were champions at the art of visual manipulation, puzzling and delighting worldwide audiences with timeless illusions. In this 320-page, breathtaking collection, Pulitzer Prize-winning author Douglas R. Hofstadter explains their dazzling trickery which, along with hundreds of remarkable paintings from eighteen other artists, make it the definitive book to optical illusions. Dali’s painting “Old Couple or Musician” (1930) is just one the astonishing creations by these “Masters of Deception”: from afar and at a glance, it depicts what seems to be an old woman and man looking at each other but, when observed a tad closer, seems to represent a young man playing guitar with a woman sitting opposite him instead. Escher’s impossible buildings in “Belvedere” (1958), and “Waterfall” (1961) are also featured here. The incredible array of playful art includes Shigeo Fukuda’s “Mary Poppins”, Giuseppe Arcimboldo’s fruit-faced Vertumnus.

## THE ART OF MOVEMENT

Every photograph captures both the stillness of a single instant and the vitality of movement in such a vivid way that it appears to be dancing across the pages.

4.



A celebration of dance, “The Art of Movement” captures the movement, flow, grace and lightness of stellar, world-class contemporary ballet dancers, in hundreds of breathtaking photographs.

The book is a majestic compendium of the husband-and-wife duo behind NYC Dance Project’s work. Deborah Ory and Ken Browar combine their shared passion for both arts to freeze in time the performances of more than 70 dancers from the world’s most prestigious schools: American Ballet Theater, New York City Ballet, the Royal Ballet, and many more. The beauty of every photograph is enhanced by intimate and inspiring words from the dancers, choreographers and artistic directors on their personal meaning of dance.

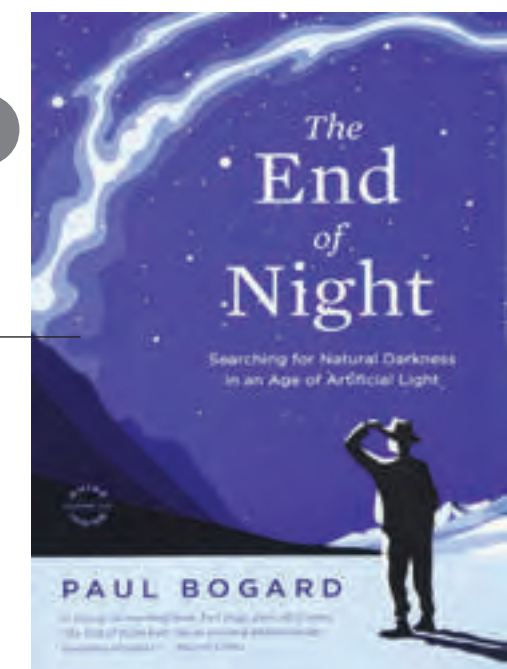
“The Art of Movement” won an International Photography Award in 2016 for Best Book, in the People/Portraits category. “Harper’s Bazaar” highlights the book’s ability to “defy the static limitations of the page with brilliant dynamism in a breathtaking homage to the art and beauty of the human form.” “The Washington Post” notes the surprising balance between “the dramatic lighting and compressed storytelling of a ‘Vogue’ shoot” and “gorgeous creatures who seem to be floating, flying or balanced on nothingness.” Definitely, the perfect book for long-time lovers of dance and newly avid fans.

## THE END OF NIGHT Searching for Natural Darkness in an Age of Artificial Light

A walk on the dark side with a constellation of experts that range from lighting designers to sleep therapists, this book sheds light on the importance of defending one of nature’s most thrilling wonders: a brilliantly starry night. Light pollution is growing: in Western Europe and the United States, 99% of people no longer experience a “truly dark night”. Eight out of ten Americans born today have never seen the Milky Way. In his illuminating, immersive and poetic “part elegy, part call-to-arms” (Boston Globe), creative nonfiction professor Paul Bogard travels the globe to find the wildly dark night sky. Blending personal narrative, natural history, health, science and folklore, he tries to open the readers’ eyes to night and reminds them to celebrate it. In Paris, for example, Bogard’s guide is François Jousse, who illuminated the architectural stars of the City of Light, from Notre-Dame to the Sacré-Coeur. In London, he takes the route of one of Dickens’s beloved “Night Walks”, meeting along the way some lamplighters responsible for maintaining the city’s 1,600 remaining gas lamps. The author is also the editor of the anthology “Let There Be Night: Testimony on Behalf of the Dark” (2008).

5.

“A moving, poetic, immersive, multifaceted, and thought-provoking study... Terrific.” (“Publishers Weekly”)





# *THERE'S* **A LIGHT** *THAT NEVER* *GOES OUT*

---

*Lighthouses are majestic places that don't belong to the ocean nor to the land. Or maybe they belong to both. In a constantly changing world, these magical guardians still stand. And, even with the massification of the GPS and advanced technology used in boats, they still shine.*

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COLOMBIA

THE SENTINEL  
OF SANTA MARTA

Out in the Caribbean, ahead of the bay, there is a rocky island which greets new arrivals. From its highest point, flashes the beacon of the Faro del Morro lighthouse, also known as the Farol de Santa Marta, being a symbol of Colombia's oldest city. The original structure dates to 1869, roughly a century after Governor Rosales Trancoso ordered the construction of the Santa Ana fort on the island, 62 metres above sea level. The history of the lighthouse is intertwined with that of the fort, from the ruins of which it rose. It is linked to the legends, triumphs and tragedies of Santa Marta, at two contrasting moments in its history.

By day, the lighthouse makes the foam of the waves shine with another light.



© Javier Jordi



© Javier Jordi

LOCATED

at the foot of the Sierra Nevada, Santa Marta was the second Spanish settlement in South America, founded on the 29<sup>th</sup> of July 1525 by the conquistador Rodrigo de Bastidas. During the period of conquest and colonization, the island protected Santa Marta from the attacks of English pirates in search of gold and jewels. In 1816, the stronghold was home to the last viceroy, General Francisco de Montalvo, and during the War of Independence – which took place over six battles between 1813 and 1823 – it served as a prison for criollo insurgents. When Simón Bolívar – El Libertador – died in 1830, shots were fired from the island in mourning. The Venezuelan general and politician had fought the Spanish colonial army, supported by the United Kingdom, liberating Colombia in 1822.

Photographs from a visit to Santa Marta bring back the image of the lighthouse which, by day, makes the foam of the waves shine with another light: that of its lonely, fragile beauty. There is also the beauty of the island itself, a sacred place for local indigenous people, who would flock there to watch the sunset and the twilight, when the sun would marry the moon and create the stars and constellations.

Unfortunately for the romantics, the current tower is not the original: unveiled in January 1999, the lighthouse as we know it today is of a hexagonal design, 22 metres and four storeys high. It is solar powered.

In the 2013 film *El Faro*, directed by Pacho Bottía, the structure illuminates the life of Ángel, a lighthouse keeper who has an eternal promise he must fulfil. He rescues a shipwrecked couple who, enchanted by the island, quickly find themselves forced to choose between a dream of love in distant lands and the dignity of a place forgotten by the world.

People would  
flock there  
to watch the  
sunset and the  
twilight.



POLAND

A BREATHTAKING WINDOW ON WWII

By the second half of the 19<sup>th</sup> century, the Neufahrwasser (Nowy Port) district became an important place for the trans-shipment of cargo, for in 1867 it was linked to Gdańsk by rail. The necessity of having a higher light, placed at least 23 feet above mean sea level, to guide ships passing by the Hel peninsula, led the Gdańsk authorities to build a new lighthouse.



© Jan Miko / Shutterstock.com

Until the end of August, you can reach the lighthouse by water tram. It stops at the lighthouse after dropping off at Westerplatte, on the opposite bank.

BUILT

in what was the then prevailing style of “Renaissance Gdańsk,” with its typical red bricks, the lighthouse at Nowy Port came into operation in 1894. Crushed rock combined with concrete was used in the construction of the 89 feet-octagonal tower, whose silhouette is said to have been inspired by the one of a long-lost lighthouse built in 1871 in Cleveland, Ohio. The centrepiece of the lighthouse is a very useful, yet rare instrument in maritime navigation, called time ball. Its dropping at noon would enable ship’s captains to set their chronometers with precision. The building was also a station for the harbour pilots. Equipped with binoculars, they would observe nearby ships through a window or from the balcony, then run down the stairs to the nearby moorings, enter a boat and row in the direction of the vessel, leading it through the port channel to the city quay.

The Nowy Port lighthouse made history when, on September 1, 1939, at 4:45 AM, shots fired by the German armed forces commanded from its upper floors signalled the start of World War II. The Polish soldiers fought back with a 75mm field gun and, at the second firing, the tower was seriously damaged. The Germans immediately rebuilt the façade, but the traces of this event remain visible to the naked eye. The Port of Gdańsk kept growing, making it essential for a larger modern lighthouse to be erected in a new place. Therefore, exactly 90 years after being commissioned, the structure extinguished its light in 1984. But then, in the ninety nineties, Stefan Jacek Michalak, a Pole who had lived in Canada for 30 years, set his eyes on it in one of his visits to the country. Amazed at the beauty and symbolism of the building, he told himself, “That’s for me! The lighthouse must be mine!” To Stefan, a qualified engineer, these beacons of fire represent all that is best about human beings: the desire to warn of danger, the desire to save in a disaster, the desire to bring help to survivors and the desire to point to a proper way of life. His fascination with this particular lighthouse intensified that passion and led him to the decision of presenting the Gdańsk city authorities and by the Gdynia Maritime Bureau a restoration project, regarding the idea of opening the lighthouse to the public. After years of renovation works, in 2004, the Nowy Port Lighthouse began a second life as a historical monument to be visited.

Open from spring to autumn, it is now the only privately-owned lighthouse in Poland. A total of 114 steps lead to the very top, where a light again burns and one can admire the breathtaking view over the port, the entire Bay of Gdańsk and Westerplatte, on the opposite bank. Inside, there are examples of preserved optical equipment and an outstanding miniature lighthouse museum. Among the objects on view, there is a telephone from the turn of the 20<sup>th</sup> century that the Gdańsk lighthouse keeper would use to communicate with the port captain.

The Nowy Port Lighthouse and the Rozewie Lighthouse on post stamps from Poland.



© marekulas / Shutterstock.com

© Steve Heap / Shutterstock.com



The city’s Nowy Port Lighthouse was inspired by a long-lost lighthouse built in 1871 in Cleveland, Ohio.

“Lighthouses symbolise all that is best about human beings: the desire to warn of danger, the desire to save in a disaster, the desire to bring help to survivors and the desire to point to a proper way of life.”



PORTUGAL

288 STEPS  
TO GREATNESS

Nearly half a century after the opening of the Barra de Aveiro sandbank in 1808, the long stretch of the Portuguese coastline between Cabo Mondego and Foz do Douro still did not have a lighthouse to guide maritime traffic.

With the first hills a long way inland, the flat coastline produced an illusion of distance, and shipwrecks were common. To resolve this problem, Fontes Pereira de Melo, minister of Public Works, published a decree on the 28<sup>th</sup> of January 1856, addressed to the ministry representative for the district of Aveiro, Silvério Pereira da Silva. This provided instructions for the construction of a lighthouse – what is today the Farol da Barra.



© J'Pêls Litoral Ria de Aveiro



© J'Pêls Litoral Ria de Aveiro

The tower is made from stone and coloured in white and red stripes.

With a height of 203 feet, the Barra Lighthouse is the tallest in Portugal.

AN article from the journal *Arquivo do Distrito de Aveiro*, by the renowned local historian Francisco Ferreira Neves, recalls the concerns outlined by the minister in the decree, which referred to the “harm that may be caused both to human persons and trade” due to the “lack of light signalling along this stretch of the coastline.” Despite the urgency, work did not begin with the desired promptness, resulting in further human and material losses. Finally, the municipality took action: in September 1862, the Municipal Chamber of Aveiro made a petition to the king, Dom Luís I, requesting the construction of a lighthouse at the southern end of the sandbank. The petition included the following: “No-one can be in any doubt, Sir! On a stretch of coast so long and dangerous, where sandbars and shoals are formed by violent currents, the direction of which changes daily, a lighthouse would ensure that ships sailing close to the land do not go astray. They would overcome the difficulties of navigation, without running the risk of shipwreck upon the sandbanks, sometimes even on calm nights, as unfortunately has been known to occur.” Nearly a year later, a fresh decree ordered the realisation of the project, with a corresponding budget. In March 1885, construction of the lighthouse began on the Praia da Barra, the work of the engineer Paulo Benjamim Cabral. Unveiled in August 1893, the Farol da Barra (or Farol de Aveiro, as it is popularly known) is one of the most iconic landmarks of the Municipality of Ilhavo, being visited by thousands of tourists every year. With the beacon at a height of 203 feet, this imposing cylindrical tower is the highest in the country, and at the time of its construction was the sixth highest in the world. The main beacon was an incandescent petrol lamp, and a clockwork mechanism produced the rotation of the lens. It was only in 1950 that the lighthouse became powered by electricity, with a halogen lamp, the beam of which can reach 22 nautical miles, the equivalent of 40 kilometres. The climb to the summit means ascending a spiral staircase of 288 steps, divided into two parts: 271 stone steps and the second sector is made from metal. The reward for reaching the top is a balcony with views over the endless sea, the Ria de Aveiro lagoon and the city, which wraps them in a great embrace.



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DIRECTOR  
**SARA MIRANDA**

EDITORS  
**RICARDO DOMINGOS, FERNANDO RENTE**  
**JERÓNIMO MARTINS, CORPORATE COMMUNICATIONS AND RESPONSIBILITY DEPARTMENT**

VISUAL CONCEPT AND CONTENT PRODUCERS  
**EDIT SET GO**

DESIGN AND ART DIRECTION  
**LABDESIGN**

CONTRIBUTING PHOTOGRAPHERS  
**PAULO SEGADÃES, PAULO SOUSA COELHO, THEO GOULD, PEDRO NÓBREGA, HD HOUSE**

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**RUA ACTOR ANTÓNIO SILVA Nº 7**  
**1649-033 LISBON**  
**PORTUGAL**

CONTACT  
**FEED@JERONIMO-MARTINS.PT**

WEBSITE  
**FEED.JERONIMOMARTINS.COM**

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